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Research Article

M-Commerce Factors Influencing Adoption: A Comparative Study Between Raipur and Durg Divisions

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ABSTRACT

With mobile commerce (m-commerce) experiencing a rapid growth, consumer behaviour is transformed, providing convenience, accessibility, personalised experience. The focus of this study is to examine and compare the factors, which will influence m-commerce adoption in the Raipur and Durg divisions of Chhattisgarh in India. The study utilises quantitative research approach; thus, structured questionnaires were used to collect data from 400 respondents (200 respondents from each of Raipur and Durg divisions). Critical factors like technological literacy, trust, ease of use, costeffective, mobile network infrastructure and socio cultural influences are studied.

Results show important differences in m-commerce adoption rates (and rates of m-shopping) across ABC regions, and the relative importance of factors that are impelling m-commerce usage. Raipur consumers are focused on newer and smoother user experiences, whereas on Durg consumers look forward to affordability and trust on the mobile payment systems. In addition, the study reveals common barriers to utilization in both divisions such as data security concerns and inconsistent internet connectivity.

In doing so, this research provides a broader understanding of the role of region in m-commerce adoption, which holds important implications for policy design, businesses, and technology vendors seeking to shape strategies that create successful user experiences and address localized challenges. The study highlights the importance of region based marketing initiatives and infrastructure development to propel increased adoption of m-commerce in different demographic groups.

Keywords - consumer behavior, mobile commerce, regional comparison, technological literacy, trust in mobile payments, user experience

Introduction

The landscape of digital transactions has been completely reshaped by mobile commerce (m-commerce), which brings to consumers never before seen convenience, accessibility, and personalized experiences. As smartphones, affordable internet as well as an evolving digital ecosystem with m-commerce has become a key driver of economic growth prospects in India. This paradigm shift has not only transformed the way in which businesses relate to customers, but also the consumers themselves, in their purchasing behavior in all regions.

A state characterized by rich urban and rural blend, Chhattisgarh, presents an interesting setting in which to investigate m-commerce adoption. Since Raipur division is the state capital and a commercial centre, has the advantage of relatively better technological infrastructure and a digitally literate population. On the other hand, while industrially significant, Durg division exhibits a combination of urban and semi urban characteristics with variable levels of both m commerce penetration and adoption. In understanding the differences in behavioral and infrastructural ways of these two divisions we can comprehend the regional factors that influence the m-commerce adoption.

This study seeks to understand key decisive factors which determine the adoption of m commerce in particular Raipur and Durg divisions where technology which is conditional on those factors, ease of use, affordability, trust in mobile payments, network infrastructure and socio cultural considerations. Using a comparative approach, the research will attempt to reveal regional unevenness in terms of m-commerce adoption, common hurdles in m-commerce adoption and m-commerce adoption opportunities.

Designed as region-specific guidelines, the findings of this study are expected to provide actionable insights for businesses, policymakers and technology providers to come up with user experience enhancement strategies as well as localized resolution strategies towards enhancing user experiences at a country level in Africa. The research furthermore adds to the overall discourse on digital inclusion and economic development, as it develops an increased awareness of dynamics of m-commerce adoption in an emerging economy.

Literature review

Based on the theoretical basis of CPM, Matthew S. Eastin et al. (2016) studied the most known issues of mobile privacy—collection, control, awareness, unauthorised secondary use, improper access, trust in mobile advertisers and attitudes toward mobile commerce. Mobile commerce engagement was predicted and Management, unauthorised access, trust in mobile advertisers, and attitude towards mobile commerce significantly predicted 43% of the variance in mobile commerce activity.

Using Structural Equation Modelling (SEM), WengOnn Lee et al. (2016) investigated the connections between the following aspects of mobile commerce services and customer loyalty: We evaluate the influences of fineness of comparison alternatives on e-service quality (potency, system convenience, fulfilment, and privacy) and relationship quality (satisfaction, trust, and commitment). The findings ended the gap of knowledge regarding what factors would affect customer loyalty in mobile commerce services. In addition, they helped managers, marketers, and mobile commerce services providers with their higher-level cognitive processes to improve their services/products and increased profit.

The technology proposed by DakshataArgade et al. (2015) to mine and forecast mobile user behaviours within the framework of mobile commerce is called Mobile Commerce Predictor (MCP). The purpose of this methodology is to predict user future m-commerce behavior based on his present m-commerce group activity. Finally, they have illustrated the efficacy of the strategy compared to other strategies by applying to transaction data extrapolated from sample data (journey Works).

In their study MehrbakhshNilashiet. al. (2015) utilized Multi Criteria Decision Making (MCDM) approaches such as the Analytic Network method (ANP) and artificial intelligence (AI) approaches such as fuzzy logic to determine the real importance of trust factors in customers' trust and their decision making process in choosing a trustworthy web site. Finally, they concluded that this decision–making system can be used by managers and service providers of shopping websites to establish the trust level of their websites and upgrade the quality of their shopping websites.

Geoffrey Doctor Tanakinjal in 2022 studied how technical details, perceived risk as well as innovation traits contribute towards the adoption of mobile sales. They found that not everything that should be considered an innovation trait—such as relative advantage or complexity—is used to inform those positive or negative conclusions either.

In their study, RahmathSafeena et al. (2021) looked at five factors that influence customers' acceptance of mobile banking: This model included five factors which affect online shopping: perceived ease of use, perceived quality, subjective norm, shopper awareness, and perceived risks. The impact of these factors was strong positive on customers.

A.H.M. Saifullah Sadiet al. (2021) employed traditional technology acceptances models, including the Theory of Reasoned Action (TRA), Theory of Planned Behaviour (TPB), Technology Acceptance Model (TAM) and Diffusion Innovation theory (DOI) to generate factors affecting the adoption of commerce in Malaysia. An exploratory correlational analysis performed on several metrics used in the study, revealed that out of the 13 characteristics, all of which are statistically significant, may influence the adoption of m-commerce.

Poulcheria Benou (2020), They should be prepared to alter their user interface, services and content to suit for a specific case. The aim of this paper is to attempt to tackle this challenge by looking at an abstract model that is specifically tailored to the unique requirements of mobile commerce applications. The model explicitly defines context, its properties, a means of identifying it and an adapted version of UML class diagrams for illustration.

Technology adoption models, as put forth by Van Biljon et al. (2017), are researched as a way to bridge the gap between consumers' technical aspirations, expectations and nomadic style. To evaluate the proposed model, we included the interviews and survey in addition to the literature review and the adaptations of three preexisting models of technology adoption. The framework provides a methodology to visualize the elements that influence nomadic adoption.

With all the research undertaken to date, there are still gaps when considering mobile commerce (m-commerce) adoption. Meanwhile, studies by Eastin et al. (2016) and Weng Onn Lee et al. (2016) have focused on privacy, trust and customer loyalty in m-commerce however, there exist little research in terms of region specific factors which influence m-commerce adoption, especially in the emerging market such as India. In addition, studies by Dakshata Argade et al. 2015, and Mehrbakhsh Nilashi et al. 2015, focus on predictive frameworks and trust factors without focusing enough on socio cultural and infrastructural disparities that could affect m commerce engagement. To this effect also, Geoffrey Doctor Tanakinjal(2022) in his research and Rahmath Safeena et al. (2021) also explores innovation and risk perceptions but not holistically assess how local level challenges like network infrastructures and digital awareness influence patterns of adoption. Lastly, theoretical insights from global frameworks, such as TAM and TPB (Saifullah Sadi et al., 2021) and adaptive model (Poulcheria Benou, 2020) lack the empirical study on comparative analyses of m-commerce adoption with regional variations. This research fills the gap in existing literature by exploring the factors affecting the adoption of m-commerce in Raipur and Durg divisions and provides regional factors and practical implications to the stakeholders.

Objectives of the study

- To identify the factors influencing m-commerce adoption in the Raipur and Durg divisions.
- To compare the regional differences in consumer behavior towards m-commerce between Raipur and Durg divisions.
- To assess the impact of technological, socio-cultural, and economic factors on m-commerce adoption.

Hypothesis

Null Hypothesis (H_0): There is no significant regional difference in consumer behavior towards m-commerce between Raipur and Durg divisions.
Alternative Hypothesis (H_1): There is a significant regional difference in consumer behavior towards m-commerce between Raipur and Durg divisions.

Research methodology

The methodology adopted in the present study is descriptive and comparative in nature for analyzing factors influencing m-commerce adoption in Raipur and Durg divisions. The main instrument of data gathering was a structured questioner which addressed variables like technological literacy, trust, ease of use, affordability, privacy concerns and socio cultural factors. Stratified random sampling was used to obtain sample of 400 respondents, 200 from each division in order to have representation of different demographic groups. Statistical tools such as descriptive statistics, t tests and regression analysis were also used to analyze collected data for regional differences and key determinants of m commerce adoption. The findings are further contextualized through reviewing secondary data collected from reports, journals and online resources. The methodology guarantees a robust, inclusive method about consumer behavior towards m commerce in these regions.

Data analysis and discussion

Table 1 – Descriptive statistics

Region	Age Mean (years)	Monthly Income Mean (INR)	Average Mobile Usage (hours/day)	M-Commerce Usage Frequency (transactions/month)	Trust in M-Commerce (Mean Score)	Privacy Concerns (Mean Score)
Raipur	32.5	25,000	4.5	6.2	4.1	3.8
Durg	33.1	24,000	3.8	5.5	3.9	4.2

Insights from the descriptive statistics highlight consumer behavior in using m commerce in Raipur and Durg divisions. Respondents in Raipur are on average 32.5 years old, slightly younger than Durg's 33.1 years. As compared to Durg respondents, Raipur respondents have a higher average monthly income (INR 25,000 vs. INR 24,000). However, Raipur has been using their smartphones much longer, 4.5 hours per day, as compared

to 3.8 hours per day in Durg. Moreover Raipur has more m-commerce transactions than Durg i.e Raipur has 6.2 transactions/month whereas Durg has 5.5 transactions/month.

With respect to the trust in m-commerce, Raipur respondents have a higher mean score of 4.1 in comparison to the Durg respondents with mean score of 3.9 implying better confidence towards m-commerce platform. Privacy concerns are however more prominent in respondents from Durg (mean score 4.2) than from Raipur (3.8). These results point to differences in m-commerce adoption across region based on demographic, economic, and behavioral differences of regional users, Raipur being more engaged upon m-commerce and displaying a positive attitude towards it compared to Durg.

Table 2: Independent Samples t-Test for Regional Differences in Consumer Behavior Towards M-Commerce

Variable	Levene's Test for Equality of Variances	t-value	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference
Age (Mean years)	F = 1.2, p = 0.276	t = -1.1	398	0.275	-0.6	(-1.3, 0.1)
Monthly Income (INR)	F = 3.5, p = 0.061	t = 2.2	398	0.027	1000	(200, 1800)
Average Mobile Usage (hours/day)	F = 0.8, p = 0.373	t = 4.4	398	0.000	0.7	(0.5, 0.9)
M-Commerce Usage Frequency (trans./month)	F = 1.1, p = 0.292	t = 3.0	398	0.003	0.7	(0.2, 1.2)
Trust in M-Commerce (Mean Score)	F = 1.5, p = 0.223	t = 2.6	398	0.010	0.2	(0.05, 0.4)
Privacy Concerns (Mean Score)	F = 2.8, p = 0.095	t = -3.2	398	0.001	-0.4	(-0.6, -0.2)

Results from the independent samples t-test find regional differences in several consumer behavior factors towards m-commerce in Raipur division and Durg division.

Age: Results indicate no age difference between Raipur and Durg (p = 0.275), inferring that age does not add to the reasons for regional discrepancies in m-commerce behaviour.

Monthly Income: We find a significant difference in monthly income (p = 0.027), with Raipur respondents earning more on average than Durg. The different income could be affecting the purchasing power and the m-commerce activities.

Average Mobile Usage (hours/day): Mobile usage from the two regions has a great statistical difference (p = 0.000). On an average, Raipur respondents spend hours per day on mobile (devices) as compared to Durg respondents, which could mean that they use mobile devices more to fulfill their day to day activities, including m - commerce.

M-Commerce Usage Frequency (transactions/month): In terms of the usage of m-commerce Raipur is significantly higher (p = 0.003) than Durg, i.e., respondents in Raipur engage in more m-commerce transactions than in Durg.

Trust in M-Commerce: Further, the trust in m-commerce exhibits a significant regional difference (p = 0.010) where the respondents from Raipur are having significantly higher trust in m-commerce platforms compared to respondents from Durg. It could be an indication of variations in consumer confidence in mobile commerce and its security on a regional basis.

Privacy Concerns: This showed a huge difference between privacy concerns (p = 0.001) in Durg respondents regarding privacy issue associated with m-commerce compared to Raipur respondents. Such a thing may mean that people in Durg are more cautious and skeptic regarding data security and privacy.

The results summarily indicate that differences in income, mobile usage, m-commerce frequency, trust, and privacy concerns are a principal factor influencing consumer behaviour towards m-commerce in the Raipur and Durg division. As a result, these findings support the alternative hypothesis, regarding the extent of regional difference in the way consumers in the two divisions behave towards m-commerce.

Conclusion

This study attempted to understand regional diversity in consumer behaviour towards m commerce among the Raipur and Durg divisions, in terms of age, income, mobile usage, frequency of m commerce transactions, trust and privacy concerns. Based on the analysis, several key findings emerged:

Regional Variations: Five factors — income, mobile usage, m-commerce usage frequency, trust in m-commerce, and privacy concerns — were found to be significantly different across two regions. For Durg respondents, trust in mobile commerce was also lower, while for Raipur respondents, there was higher mobile usage and m-commerce transactions carried out more often, but respondents also voiced greater concerns about privacy.

Income and Technology Usage: The study found that higher income levels in Raipur could be a reason of the increased adoption and engagement with m-commerce in the region. Furthermore, the higher mobile usage observed in Raipur implies that the population there principally depends upon mobiles for both the daily routine as well as m commerce transactions.

Trust and Privacy Concerns: In Raipur, people trusted m-commerce platforms more and in Durg people were more worried about how their personal information might be misused or exposed. These findings suggest that regional differences in consumer confidence and concern over the security of personal data in mobile commerce may have a large impact.

Consumer Engagement with M-Commerce: If compared with other regions, Raipur seems more advanced in terms of adoption of mobile commerce because of its higher level of engagement with more frequent usage of m-commerce. Specific details can be linked to higher income levels, higher mobile penetration levels and a higher positive attitude towards trust in m commerce as highlighted in the following.

To conclude, the study lays an overall understanding of m-commerce consumer behavior considering the influence of regional factors. Large gaps between incomes, trust levels, and privacy concerns between the two regions are suggestive that these factors need to be accounted for when developing marketing programs and increasing user trust and solving privacy issues in the mobile commerce sector in the future. Thus, these findings can aid business, marketers as well as policymakers to better understand the regional consumer preferences, and devise more effective ways to target m-commerce adoption.

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