



A STUDY ON IMPACT OF 5G ON MOBILE COMMERCE IN ERODE DISTRICT

K. Kaleeswari ^{1*}, S. Swathi ²

^{1*} Assistant Professor, ² M.Com CA Student

PG Department of Commerce (CA),

Vellalar College for Women (Autonomous), Erode, Tamil Nadu (India)

ABSTRACT:

The rapid deployment of fifth-generation (5G) wireless technology is transforming digital ecosystems worldwide, offering unprecedented data speeds, ultra-low latency, and enhanced connectivity. This study examines the impact of 5G adoption on mobile commerce (m-commerce) in the Erode district, a growing economic hub in Tamil Nadu, India. The research investigates how 5G technology influences consumer behavior, business performance, and overall mobile transaction efficiency within the region. Primary data & Secondary data have been collected to investigate the study. In this study 100 respondents have been considered as sample from the total population in Erode. A study on impact of 5G on mobile commerce in Erode district of Tamil Nadu, India. The study explores changes in user engagement, online purchasing trends, and the quality of digital services post-5G rollout. Final outcomes of this research study shows that by improving 5G network coverage, reducing the data costs for 5G, strengthening security protocols on 5G networks & offering more interactive features like AR product make it a promising technology for the future of mobile commerce.

KEYWORDS: 5G Technologies, Mobile Commerce, Business Performance, Consumer behaviour

PAPER CITATION:

Kaleeswari, K., Swathi, S. : "A study on impact of 5G on mobile commerce in Erode district", International Journal of Informative & Futuristic Research (IJIFR), Vol.(13) (6), February 2026, pp. 691-695. DOI: <https://doi.org/10.64672/IJIFR/26.02.13.6.002>

CC BY-NC-SA 4.0

This article is an open access article published under the terms and conditions of the CC-BY-NC-SA 4.0 Creative Commons Attribution-Non Commercial- Share Alike 4.0 International Public License. All rights reserved to the author's & publisher © IJIFR 2026

1. INTRODUCTION

In recent years, mobile commerce (m-commerce) has experienced exponential growth, becoming a central pillar of the digital economy. As the demand for faster, more reliable mobile experiences continues to rise, the emergence of fifth-generation (5G) wireless technology has introduced a transformative opportunity for the mobile commerce sector. 5G is more than just a faster version of 4G; it is a technological leap that promises ultra-low latency, increased bandwidth, higher connection density, and enhanced network reliability. This study investigates the effect of 5G on mobile commerce, aiming to understand how its features impact user behavior, transaction efficiency, platform performance, and overall market trends.

2. STATEMENT OF THE PROBLEM

This study aims to analyze the 5G technology, mobile commerce is expected to become faster and more efficient. However, there is still limited understanding of how 5G is actually affecting mobile shopping, internet speed, and user interface. Many users and companies are unsure about the real benefits and challenges of using 5G for mobile commerce. This study aims to find out how 5G is changing mobile commerce and whether it is truly improving the experience for both consumers and businesses.

3. OBJECTIVES OF THE STUDY

- (i) To analyze the level of awareness about 5G technology among mobile commerce users.
- (ii) To study how 5G affects the speed and performance of mobile shopping apps.
- (iii) To investigate challenges faced by users in utilizing 5G for mobile commerce.

4. SCOPE OF THE STUDY

This study focuses on understanding how 5G technology is influencing mobile commerce (m-commerce). The study also looks at how these improvements may affect customer satisfaction and buying behavior. It considers how users experience mobile commerce on 5G-enabled devices and how businesses are adapting their platforms and services to make use of 5G features. Key areas such as mobile payments, app functionality, and real-time services are included in the scope.

5. RESEARCH METHODOLOGY

- (i) **Data Collection:** Data collection is the systematic and measuring information from a variety of sources to get the accurate picture of an area of interest. Primary Data & Secondary data have been used. Primary data has been collected through structured questionnaire method. Besides the primary data, the secondary data is also collected for the study through websites, books, leading journals and magazines referred for this purpose.
- (ii) **Sampling:** Convenient sampling is that type of sampling where the researchers select the sample according to his or her conveniences. In this study 100 respondents have been taken as sample from the total population in Erode city.

6. DATA ANALYSIS

Table 1: Percentage of respondents as per the factors

Factor	Particular	No.Of Respondents	Percentage
Gender	Male	37	37
	Female	63	63
Age	Under 20 Years	29	29
	21-30 Years	31	31
	31-40 Years	25	25
	More Than 40 Years	15	15
Occupation	Student	40	40

	Business	35	35
	Professions	15	15
	Employee	10	10
Educational Qualification	School	12	12
	Diploma	25	25
	Under Graduate	38	38
	Post Graduate	25	25
Awareness About 5g	Social Media	32	32
	News	26	26
	Friends	23	23
	Advertisement	19	19
Types Of Mobile Commerce Activities	Online Shopping	33	33
	Mobile Banking	30	30
	Learning Activities	28	28
	Food Delivery	9	9
Internet Speed	Much Faster	49	49
	Slightly Faster	37	37
	No Difference	10	10
Technical Issues	Network Drops	47	47
	App Crashes	16	16
	Payment Failures	29	29
	Others	8	8

Interpretation:

- The above table shows that 37% of the respondents are Male, 63% of the respondents are Female.
- The above table shows that 29% of the respondents are belongs to the age group of Under 20 years, 31% of the respondents are belongs to the age group of 21-30 years, 25% of the respondents are belongs to the age group of 31-40 years and 15% of the respondents are belongs to the age group of More than 40 years.
- The above table shows that 40% of the respondents are Student, 35% of the respondents are Business, 15% of the respondents are professions, 10% of the respondents are Employee.
- The above table shows that 12% of the respondents have completed school, 25% of the respondents have completed diploma, 38% of the respondents have completed undergraduate, 25% of the respondents have completed postgraduate.
- The above table shows that 32% of the respondents became aware of 5G through Social Media, 26% of the respondents through News, 23% through Friends, and 19% through Advertisements.
- The above table shows that 33% of the respondents use mobile commerce for online shopping, 30% of the respondents use mobile commerce for mobile banking, 28% of the respondents make use mobile commerce for learning activities, and 9% of the respondents engage in food delivery.
- The above table shows that 49% of the respondents feel that the internet speed of 5G is much faster compared to 4G, while 37% of the respondents feel slightly faster. About 10% of the respondents feel no difference, and 4% of the respondents feel that 5G is slower than 4G.
- The above table shows that 47% of the respondent's faced network drops, 16% of the respondents faced app crashes. 29% of the respondent's faced payment failures and 8% of the respondents faced other technical issues.

7. WEIGHTED AVERAGE METHOD

Under this method the respondents are asked rank their choices. This method involves ranking of the items given to secure a ranking of all the items involved, the research simplifies total the weighted which are given to each item.

The formula for weighted average method is

$$\text{Weighted Average} = \frac{\text{Total}}{\text{Number of items} \times \text{Number of Respondents}} \times 100$$

Table 2: Features of 5G on Mobile Commerce

Weighted Score Analysis		5	4	3	2	1	Total Score	Weighted Average Score Rank	Rank
Rank		I	II	III	IV	V			
Data Security	X	33	30	20	11	6	373	24.86	II
	WX	165	120	60	22	6			
Network Availability	X	25	18	17	15	25	303	20.2	V
	WX	125	72	51	30	25			
Low Latency	X	24	41	26	8	1	379	25.26	I
	WX	120	164	78	16	1			
Quick Payment	X	40	23	16	11	10	372	24.8	III
	WX	200	92	48	22	10			
User Interface	X	28	19	15	20	18	319	21.26	IV
	WX	140	76	45	40	18			

(Note: X=Number of Respondents; W=Weighted score point)

From the table3.20 reveals that, out of the various features Low latency is ranked first with weighted average score of 25.26 points, Data security is ranked second with weighted average score of 24.86 points, Quick payment is ranked third with weighted average score 24.8 points, User interface is ranked fourth with weighted average score 21.26 points, Network availability is ranked fifth with weighted average score 20.2 points.

8. SUGGESTIONS

- Improving 5G network coverage in both urban and rural areas can increase the adoption of mobile commerce.
- Reducing the data costs for 5G usage can make mobile shopping more affordable for a larger number of users.
- Strengthening security protocols on 5G networks can increase user trust in online payments.

- Providing clear information about 5G safety and usage can reduce hesitation among new users.
- Offering more interactive features like AR product previews can utilize the power of 5G and attract more customers.

9. CONCLUSION

5G technology is a powerful and transformative advancement that has the potential to significantly improve mobile commerce. With its ultra-fast speed, low latency, and enhanced connectivity, 5G enables smoother browsing, faster transactions, and richer shopping experiences for users. It supports advanced features such as high-quality video previews, real-time customer support, and interactive AR-based product displays, making mobile shopping more engaging and convenient. While challenges such as coverage limitations, higher device costs, and security concerns still exist, the advantages of 5G make it a promising technology for the future of mobile commerce. Overall, 5G plays a vital role in shaping a more efficient, immersive, and user-friendly mobile shopping environment.

10. REFERENCES

- [1] M.Magnaghi (2025), 5G is not just G:A review of the 5G business model. Science direct journal
- [2] RS Al-Maroofo (2021)-Acceptance determinants of 5G services. Growing science journal
- [3] M Attaran (2021)- The Impact of 5G on the evolution of intelligent automation and Industry Digitization.
- [4] Dilsha, M.D; Neenu,W.-(2015),Introduction to 5G wireless Technology.International journal of Engineering Research and Technology(IJERT)