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International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 13 **Issue:** V **Month of publication:** May 2025

DOI: https://doi.org/10.22214/ijraset.2025.71711

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 13 Issue V May 2025- Available at www.ijraset.com

A Comparative Study of Cash and Cashless Transactions in Bihar

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Abstract: ***This study examines the evolving landscape of financial transactions in Bihar, focusing on a comparative analysis between traditional cash-based methods and emerging cashless alternatives. The research employs a mixed-methods approach, combining primary data collected from 318 respondents across diverse demographics—including age, gender, education, occupation, income levels, and geographic locations—with secondary data sourced from government reports, industry publications, and academic studies.***

The primary data provides insights into awareness, usage patterns, preferences, and satisfaction levels associated with various transaction modes. Findings reveal a significant inclination towards cashless transactions, with platforms like Google Pay, PhonePe, and Paytm being predominant. Key drivers for this shift include convenience, speed, and security. However, challenges such as technological barriers, limited digital literacy, and infrastructural constraints persist, especially in rural areas.

Secondary data analysis contextualizes these findings within broader national trends, highlighting the role of government initiatives like the Digital India campaign in promoting digital transactions. It also underscores the disparities in adoption rates between urban and rural regions, emphasizing the need for targeted interventions to bridge these gaps.

The study concludes by recommending strategies to enhance digital literacy, improve infrastructure, and build trust in digital payment systems to facilitate a smoother transition towards a cashless economy in Bihar.

Keywords: Cashless Transactions, Digital Payments, Financial Inclusion, Bihar, UPI, Google Pay, PhonePe, Paytm, Cash vs. Cashless, Rural-Urban Divide, Digital Literacy, Digital India, Transaction Preferences, Payment Behavior, Mixed-Methods Research, Financial Technology (FinTech), Digital Economy, Infrastructure Challenges.

I. INTRODUCTION

The advent of digital technology has revolutionized financial transactions globally, and India is no exception. The government's push towards a cashless economy, especially postdemonetization in 2016, has led to a surge in digital payment methods. Initiatives such as the Digital India campaign have further accelerated the adoption of cashless transactions, aiming to enhance transparency, reduce corruption, and improve the efficiency of financial systems.

In Bihar, a state characterized by its diverse socio-economic fabric and varying levels of technological infrastructure, the transition from cash to cashless transactions presents unique challenges and opportunities. While urban areas have witnessed a relatively swift adoption of digital payment systems, rural regions continue to grapple with issues such as limited internet connectivity, low digital literacy, and skepticism towards digital financial tools. These disparities highlight the need for a nuanced understanding of the factors influencing transaction preferences across different demographics and geographies within the state.

The aim of this study is to analyze how cash and cashless transaction methods are utilized across various segments of Bihar's population.By analyzing primary data from 318 respondents, the research seeks to understand the factors influencing the adoption of digital payment methods, the demographic variations in transaction preferences, and the barriers hindering the widespread acceptance of cashless systems. The insights derived from this study are expected to inform policymakers and stakeholders in devising strategies to enhance financial inclusion and digital literacy in the region.

Furthermore, the study delves into the behavioral aspects influencing transaction choices, examining how factors such as age, education, income, and occupation correlate with the preference for cash or cashless methods. By providing a comprehensive analysis of these dynamics, the research contributes to the broader discourse on digital financial inclusion and offers practical recommendations for fostering a more inclusive and efficient financial ecosystem in Bihar.

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II. OBJECTIVE OF THE STUDY

1) To assess the level of awareness and knowledge among rural populations in Bihar regarding cashless payment systems such as UPI, mobile wallets, and digital banking.
2) To identify the most commonly used digital payment platforms in rural areas and understand user preferences.
3) To examine the socio-demographic factors (age, gender, income, education) that influence the adoption of cashless transactions.
4) To analyze the challenges and barriers hindering the adoption of digital payment systems in rural regions, including digital literacy, infrastructure, and internet connectivity.
5) To evaluate the effectiveness of government initiatives such as "Digital India" and local efforts like "Bihar Wallet" in promoting financial inclusion through cashless means.
6) To compare the frequency and purposes of cash vs. cashless transactions among rural users (e.g., bill payments, grocery, marketing).
7) To recommend strategies and policy interventions for improving the adoption and accessibility of cashless payment systems in underdeveloped and semi-urban regions of Bihar

III. LITERATURE REVIEW

The transformation of India's financial ecosystem through digital payments has attracted considerable academic attention, particularly in evaluating the shift from cash to cashless transactions across varied demographics.

Eric W.K. See, Savvas Papagiannidis, and J. Christopher Westland (2014) examined consumer perceptions toward digital payment systems. Their research emphasized that trust and convenience significantly influence the adoption of cashless methods such as debit cards, credit cards, and e-cash. The findings suggest that both online and offline transaction behaviors are driven by user sentiment and perceived reliability of payment platforms.

Yunji Moon & Deborah J. Armstrong (2019) explored the rise of O2O (Online-toOffline) commerce, emphasizing its role in bridging digital and physical market spaces. They underscored the need for vendors to understand evolving consumer expectations and identified technologies like Near Field Communication (NFC) and Location-Based Services (LBS) as foundational to a seamless cashless ecosystem. However, such technologies are yet to gain widespread adoption in rural regions of India, including Bihar. Yuewen Liu, Junlong Luo, and Long Zhang (2020) highlighted the increasing dominance of mobile payment platforms over traditional cash usage. Despite infrastructural hurdles, mobile transactions are perceived as faster, more efficient, and user-friendly — a trend that continues to influence payment preferences, particularly among digitally literate populations.

Yash Kumar Gupta, Girish Jeswani, and Olan Pinto (2021) addressed a critical challenge in digital transactions: internet dependency. Their study, particularly relevant during the COVID-19 pandemic, suggested that developing offline transaction capabilities could improve access in remote and rural locations — a crucial insight for states like Bihar, where digital infrastructure varies widely. A region-specific study conducted in Bhagalpur, Bihar found widespread usage of UPI platforms like PhonePe and Google Pay among educated urban males aged 20–39. However, adoption rates in rural areas lag due to limited internet access, digital illiteracy, and cultural reliance on cash.

Das & Sinha (2024) further emphasized the urban-rural digital divide in Bihar, attributing slow rural adoption to infrastructural barriers. Government programs such as Digital India and localized efforts like Bihar Wallet have attempted to close this gap, but key concerns — including trust in digital systems and internet accessibility — remain significant hurdles.

IV. RESEARCH METHODOLOGY

This research adopts a comparative and analytical approach to investigate consumer behavior and preferences concerning cash and digital payment methods within Bihar. The objective is to examine transaction patterns, demographic influences, and the key barriers affecting the adoption of digital payment platforms—particularly UPI—across both urban and rural settings.

A. Data Sources and Collection Methods Primary Data

Primary data was collected through a structured questionnaire distributed via both online and offline channels across Bihar. A total of 318 valid responses were obtained. The survey focused on:

- Demographic attributes (age, gender, income, education, occupation, and location)
- Preferences between cash and cashless payment modes
- Frequency and common purposes of digital transactions
- Familiarity with and trust in UPI and other digital payment systems
- Challenges or limitations experienced while using digital payment methods

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B. Secondary Data

To support the primary findings, secondary information was gathered from:

- Scholarly publications and research studies related to digital payment adoption in Bihar and India
- Area-specific case studies and news reports highlighting efforts to implement cashless payment systems and the technological barriers encountered

C. Data Analysis Methods

The data collected via Google Forms was analyzed using basic visual tools. **Pie charts and bar graphs**, auto-generated by the platform, were used to represent demographic details and consumer payment preferences. The emphasis was on identifying observable trends and patterns in the use of cash versus digital transactions.

D. Ethical Considerations

- All participant data was anonymized to maintain confidentiality
- Respondents provided informed consent prior to participation
- The collected data was exclusively used for academic and research purposes

V. SCOPE OF THE STUDY

This study is geographically focused on the state of Bihar, one of India's most populous and economically diverse states, encompassing both urban and rural populations across multiple districts. It explores the comparative usage of cash and cashless transactions, with particular emphasis on digital payment methods such as UPI (Unified Payments Interface), mobile wallets, and internet banking, against traditional cash-based transactions.

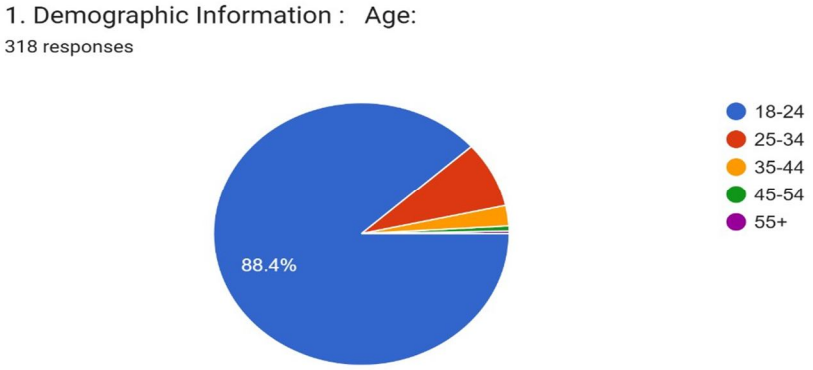
The study investigates consumer behavior across a broad spectrum of demographic categories, including:

- Age groups (youth, working adults, and senior citizens),
- Gender,
- Educational backgrounds (from no formal education to postgraduate levels),
- Occupational categories (students, professionals, daily wage workers, homemakers, etc.),
- Income levels (low-income to high-income brackets), and Geographic locations (urban metros vs. rural and semi-urban areas

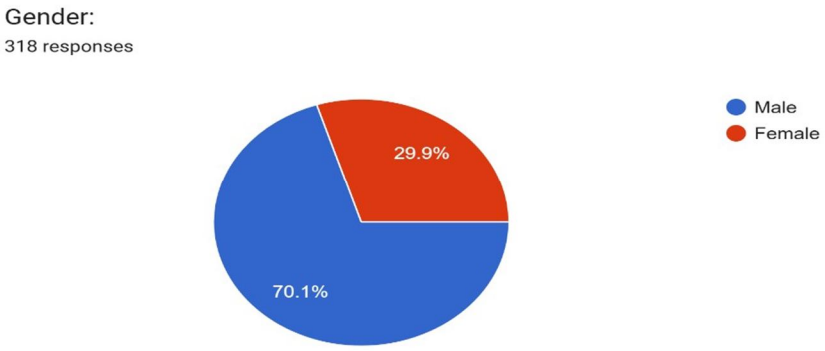
VI. RESEARCH HYPOTHESES

1) H1: There is a significant correlation between age and the preference for cashless transactions.
2) H2: Higher educational qualifications are associated with increased adoption of digital payment methods.
3) H3: Urban residents are more likely to use cashless transactions compared to rural residents.
4) H4: Perceived convenience and security positively influence the preference for cashless transactions.
5) H5: Limited digital literacy and infrastructural constraints are significant barriers to adopting cashless payment methods.

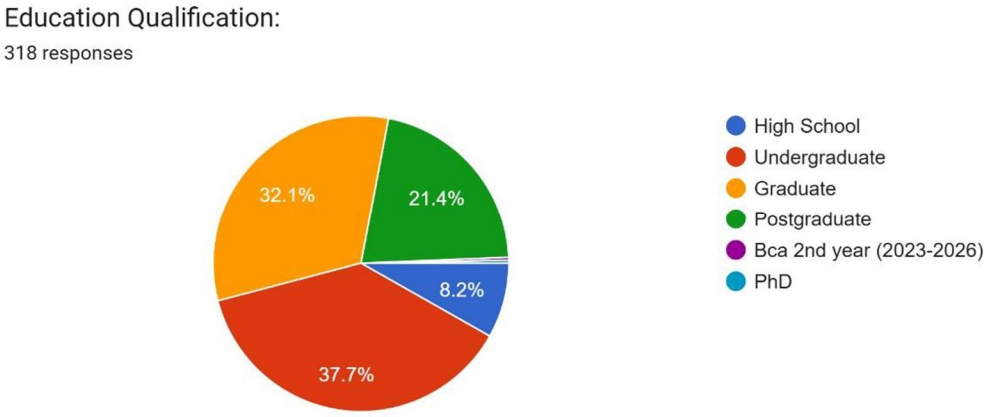
VII. DATA ANALYSIS AND INTERPRETATION



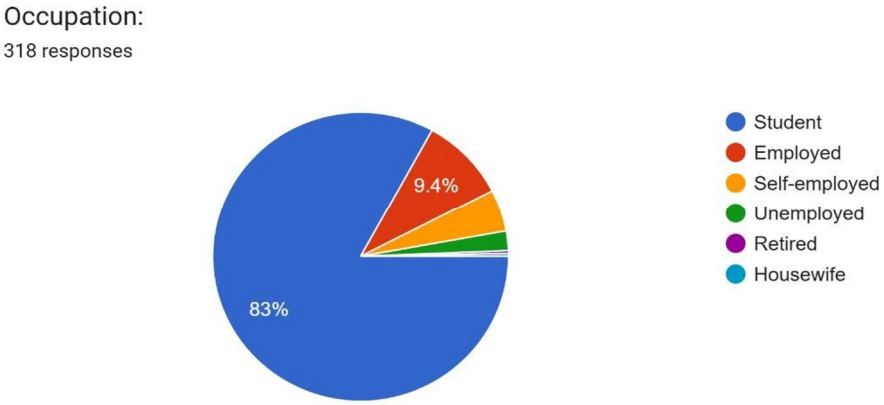
The majority of participants (88.4%) belong to the 18–24 age group, highlighting the dominance of youth in this study. This group is more likely to engage in digital transactions, indicating a strong inclination towards cashless systems among the younger population in Bihar.



The sample consists of 70.1% male and 29.9% female respondents. This indicates a male-majority in participation, which could reflect a gender disparity in digital access or willingness to participate in surveys.

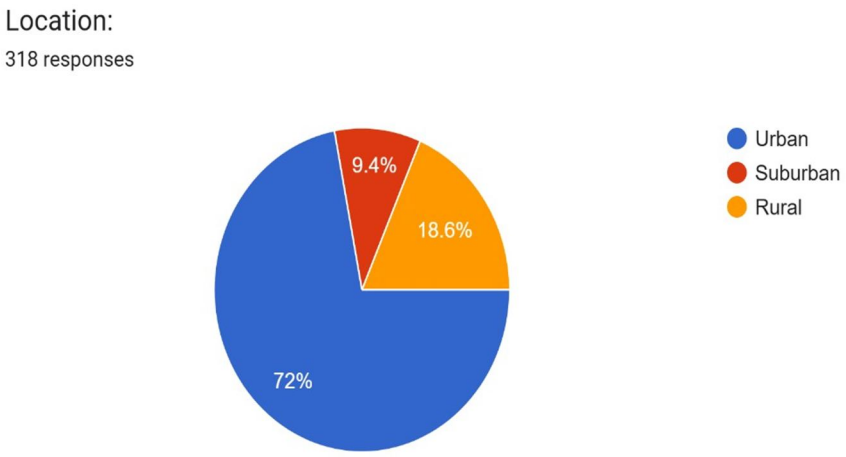


A large majority (83%) of the respondents are students, indicating that the survey primarily captures the perspectives of the youth and academic community. The remaining responses are distributed among employed individuals, self-employed, unemployed, retired, and housewives, offering some occupational diversity.

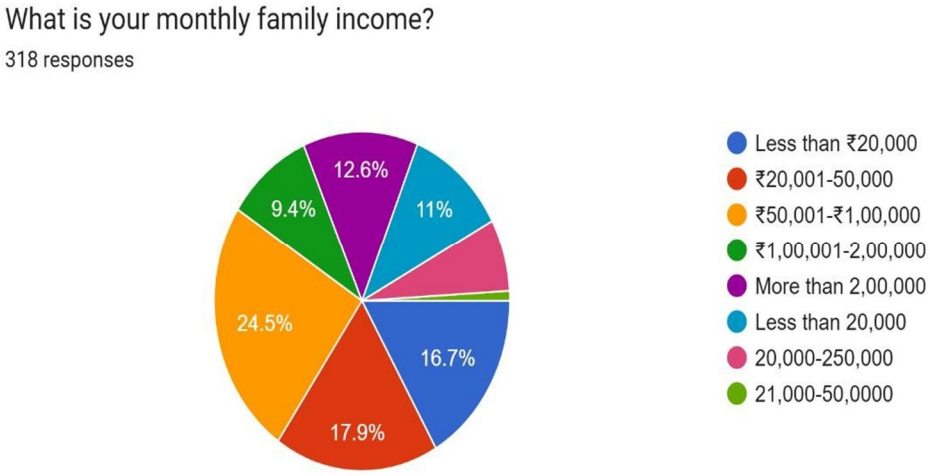


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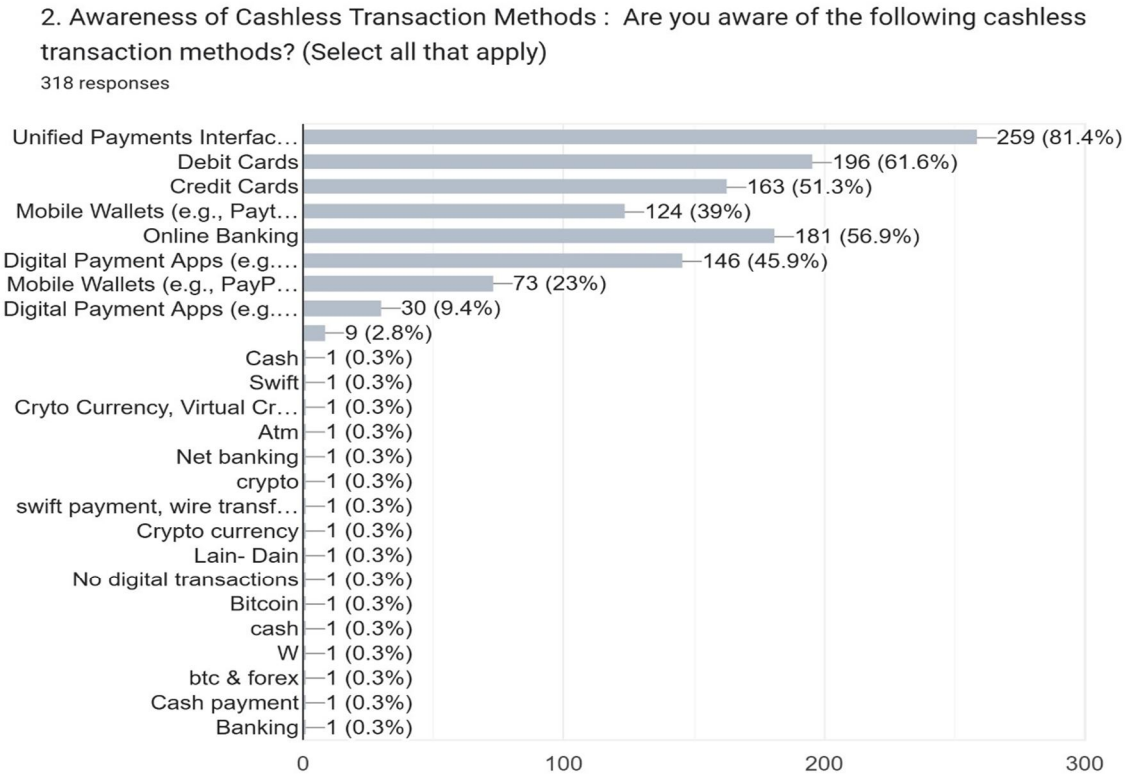


Most respondents (72%) live in urban areas, which likely influences their greater exposure to and use of cashless technologies. However, with 18.6% from suburban and 9.4% from rural areas, the survey also includes a variety of perspectives from different geographic backgrounds in Bihar.



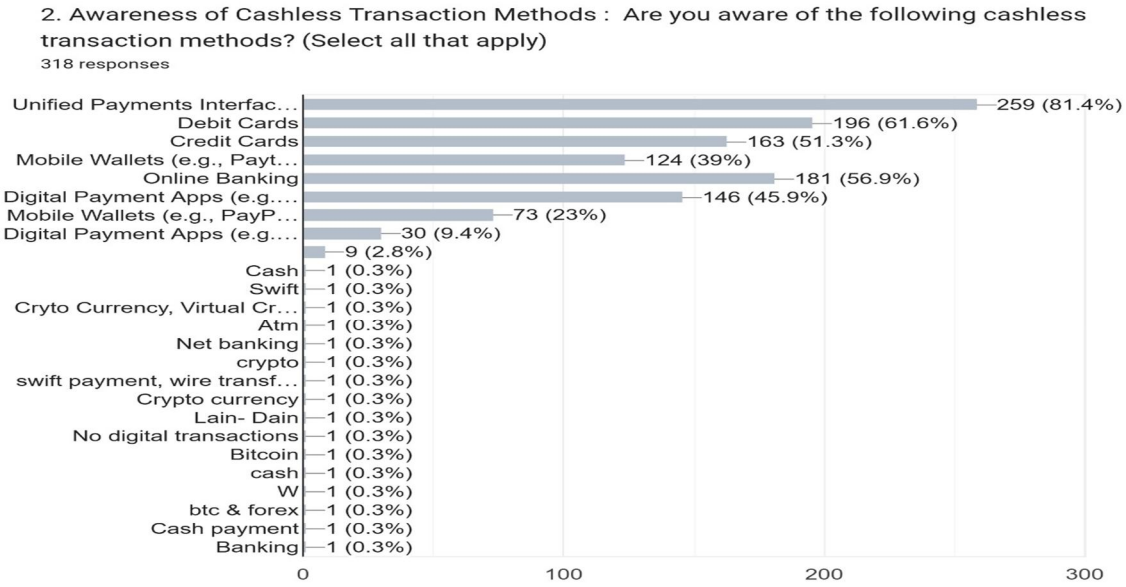
The majority of respondents (20.8%) reported a monthly family income of more than ₹1,00,000, followed by 17.9% in the ₹50,000 – ₹1,00,000 range. This indicates a fairly diverse economic background among participants, with a substantial portion also falling in lower income brackets below ₹30,000 per month.

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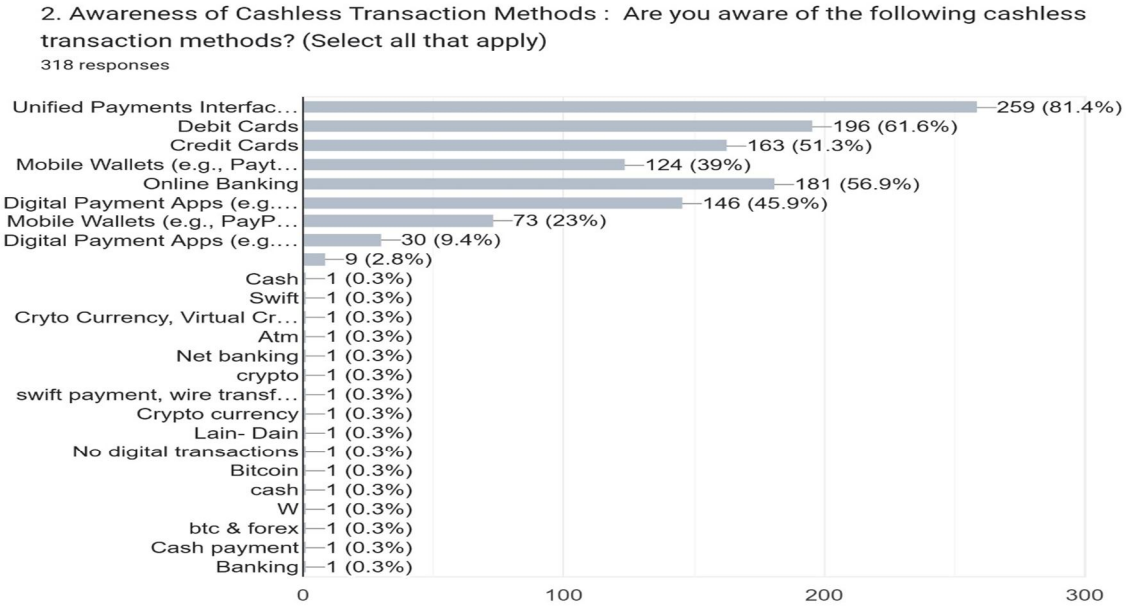


The majority of participants are aware of UPI (81.4%) and mobile wallets (69.5%). Debit and credit cards also show high awareness. However, newer methods like cryptocurrencies and BNPL are still emerging, with limited awareness.

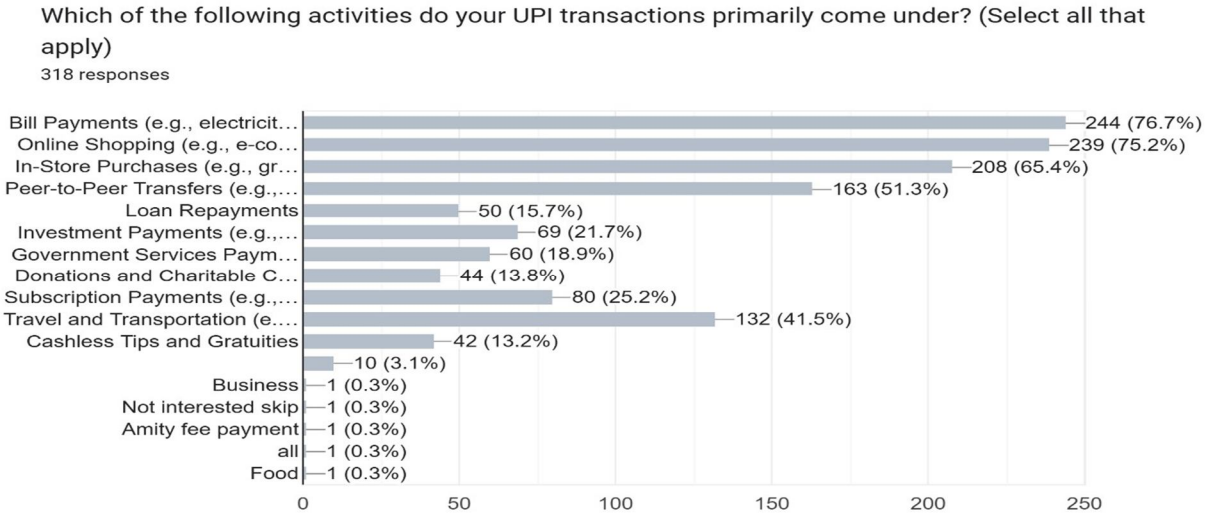
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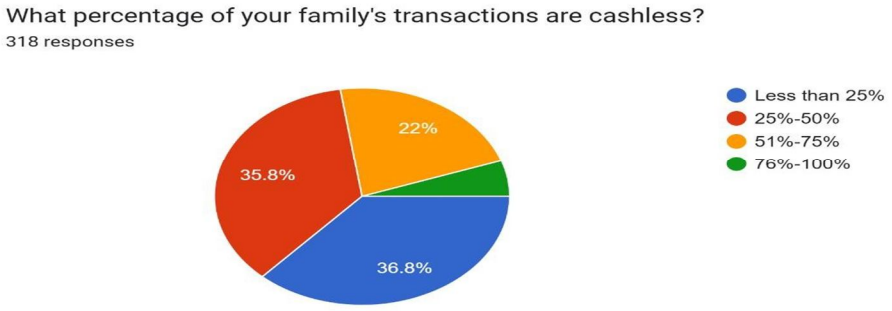


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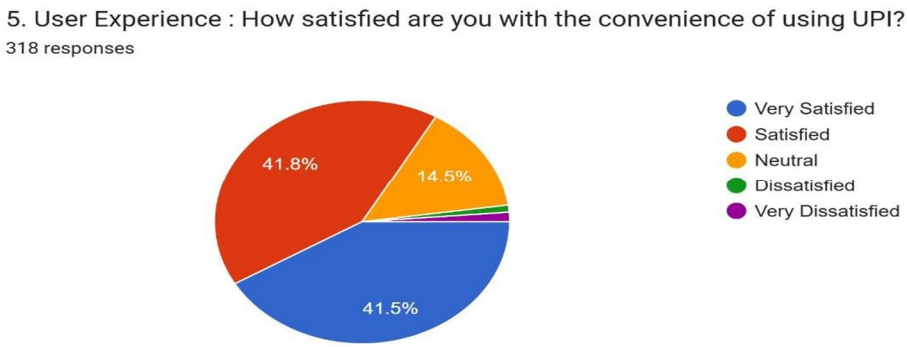


The most common activities using UPI include:

- Bill payments (204 responses, 64.7%)
- Online shopping (200 responses, 63%)
- In-store payments (161 responses, 50.6%)
- Recharges and ticket bookings (44–60 responses, ~14–19%)



- Around 36.8% of respondents stated that 76%-100% of their family's transactions are cashless.
- About 35.8% reported 51%-75% usage.
- The remaining are split among 25%-50% (22%) and less than 25% (5.3%).



Satisfaction levels with UPI are high:

- 41.5% of users are very satisfied.
- Another 41.5% are satisfied.
- A smaller percentage reported being neutral (14.5%) or dissatisfied (2.5%).

VIII. KEY FINDINGS

1) Youth Dominance in Digital Payments

- 88.4% of respondents are aged 18–24, indicating that young people are the primary users of cashless payment methods in Bihar.

2) Gender Disparity in Participation

- The survey had 70.1% male and 29.9% female respondents, suggesting a gender gap in either digital financial access or survey participation.

3) Student-Centric Sample

- 83% of participants are students, reflecting the opinions of the youth and academic population.

4) Urban Bias in Response Base

- 72% of respondents live in urban areas, compared to 18.6% suburban and 9.4% rural, which may influence the high adoption of digital payments.

5) Diverse Economic Backgrounds

- 20.8% reported family income over ₹1,00,000/month, while others fell across mid to lower income brackets, indicating representation from various socioeconomic groups.

6) High Awareness of Cashless Methods

- Awareness is strongest for UPI (81.4%) and mobile wallets (69.5%), while newer tools like cryptocurrency and BNPL show limited reach.

7) Popular Cashless Platforms

- Google Pay (69.5%) and PhonePe (67%) are the most used platforms, followed by Paytm (38.4%).

8) Motivations for Using Cashless Transactions

- Top reasons include cashback/rewards (59.7%), GST receipt benefits (31.8%), and subsidy transfers (31.2%).

9) Barriers to Cashless Adoption

- Key reasons for preferring cash include network issues (48.5%), ease of cash use (45.5%), and transaction control (40.2%).

10) Frequent Use of Digital Payments

- 58.8% of respondents use cashless methods daily, while 16.4% use them weekly.

Most frequent UPI uses:

- Bill payments (64.7%)
- Online shopping (63%)
- In-store payments (50.6%)

11) High Family-Level Cashless Adoption

- 36.8% of respondents report 76–100% of their family's transactions are cashless.

12) Strong Satisfaction with UPI

- 83% of users are either very satisfied (41.5%) or satisfied (41.5%) with UPI's convenience.

IX. CONCLUSION

This study highlights a clear and growing preference for cashless transactions in Bihar, driven primarily by the convenience, speed, and security offered by digital payment platforms like Google Pay, PhonePe, and Paytm. These platforms have become central to everyday financial activities, especially in urban areas where digital infrastructure and awareness are higher. The shift towards cashless payments reflects broader national trends and the impact of government initiatives such as the Digital India campaign, which have promoted the adoption of digital financial services across the state.

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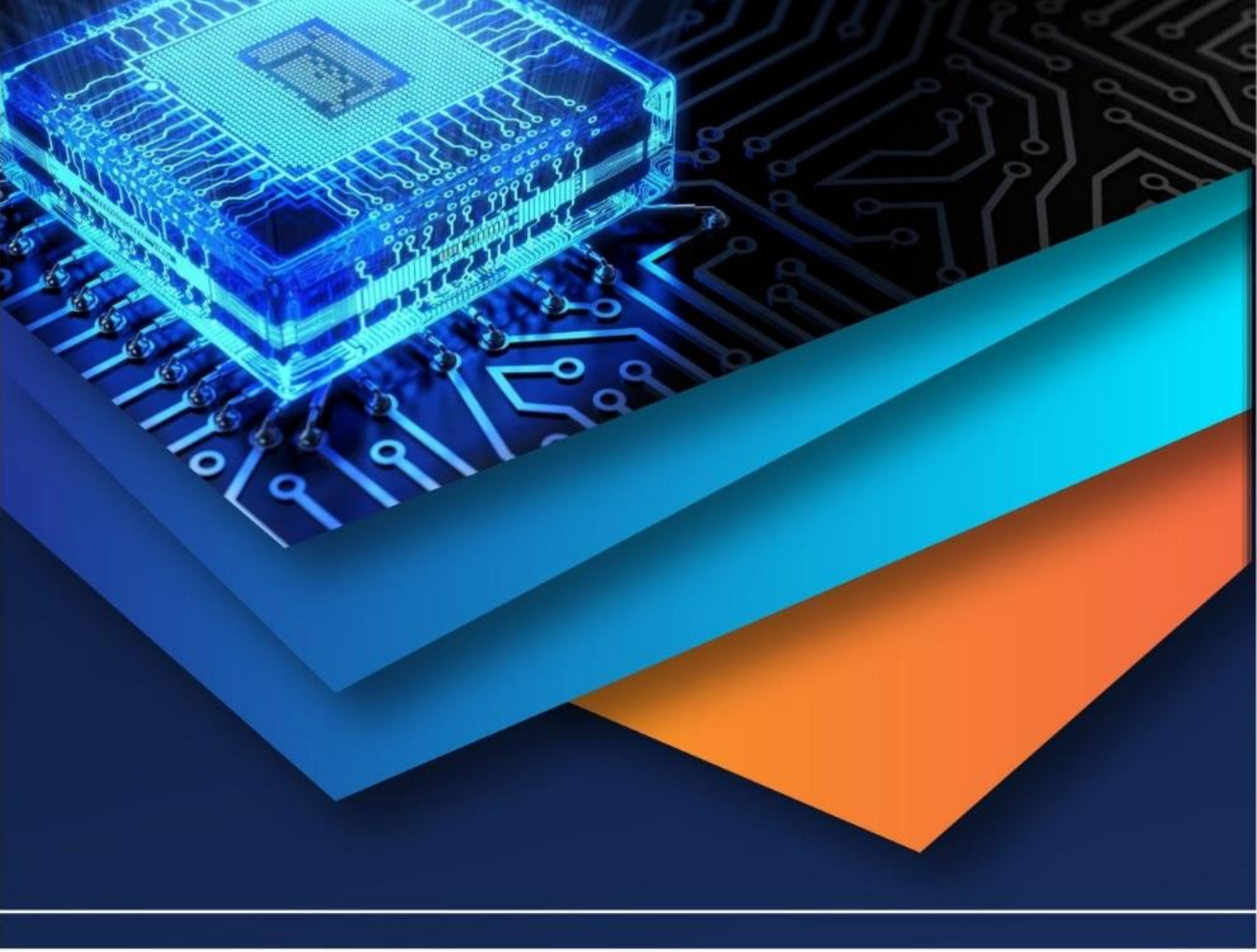
However, the study also reveals significant challenges that continue to limit the reach of cashless transactions, particularly in rural regions. Limited digital literacy, lack of trust, and infrastructural shortcomings such as poor internet connectivity and limited access to smartphones remain major barriers. These issues contribute to persistent disparities in adoption between urban and rural populations, underscoring the digital divide that inhibits inclusive financial growth. Without targeted efforts, these challenges may slow down Bihar's progress toward a fully cashless economy.

To overcome these obstacles, the study recommends focused interventions including enhancing digital literacy through education and awareness campaigns, improving digital infrastructure to ensure wider connectivity and device accessibility, and building greater trust in digital payment systems by strengthening security and customer support. By addressing these critical factors, Bihar can accelerate its transition to a cashless economy, fostering financial inclusion and unlocking economic opportunities for all sections of society.

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