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Journal of Development Economics and Management Research Studies (JDMS)
A Peer Reviewed Open Access International Journal
ISSN: 2582 5119 (Online)
Crossref Prefix No: 10.53422
12 (25), 35 - 60, July – September, 2025
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Fintech in the 21st Century: Understanding the feasibility of a Cashless Economy with reference to Bengaluru

Atashi Adhikari[1], Chitra Vasu[2] and Divyam Singh[3]

Abstract

Financial technology (FinTech) has transformed India's financial transaction systems, which support the national move towards a cashless economy. This research examines the economy's potential for becoming fully cashless through investigating how technology-based payment systems spread among student and resident populations, and working adults. A combination of surveys supported by data analysis serves as the approach to understand the public's financial behaviour and obstacles to total financial digitisation. This transition gained momentum because of convenience factors, together with government initiatives and mobile banking solutions, as well as the widespread UPI adoption. The research study recognises major hurdles, which include unreliable internet connectivity and cyber threats, along with basic technological incompetence and societal biases to rely on cash even in unregulated markets. Digital payment systems play a crucial role in urban financial transactions, but the implementation of a fully cashless economy faces many behavioural and infrastructural barriers. The population still heavily depends on cash payments for specific transactions because the financial education needs improvement, and networks require better infrastructure and cybersecurity protection. The analysis suggests that sustainable payment systems will combine digital and cash transactions until present obstacles are eliminated. India must pursue a path to complete digital financial operations through efforts to eliminate digital inequalities as well as raise trust in financial tech solutions while expanding services throughout all economic sectors.

Keywords: FinTech, Cashless Economy, Digital Payment Systems, Digitisation, UPI, Cybersecurity

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1 INTRODUCTION

In a modern economy, financial services play a crucial role in driving growth, stability, and equitable development (Raj & Upadhyay, 2020). The financial services sector encompasses a range of elements that cater to the diverse needs of various beneficiaries, including individuals and businesses. These elements include services for banking, asset management, insurance, microfinances, and many others.

This wide-ranging diversity of services becomes the most extensive and dynamic industry for financial services in India, involving both people and businesses in wealth creation, risk management, and growth through their different facilitative services. Various launches like Pradhan Mantri Jan-Dhan Yojana (PMJDY) as well as such policies called Direct Benefit Transfers (DBT) have been boosting the financial inclusion of millions into formal banking networks over the recent decade (Garg and Panchal, 2017).

Currently, digitisation digs deeper into access between urban and rural areas to make India one of the most innovative in financial offerings across the globe. It clearly indicates economic contribution and empowerment, as well as equitable growth among the community.

Fintech, or financial technology, refers to the technology integrated within financial organizations to improve the efficiency, comfort, or accessibility of traditional financial transactions. Fintech in India basically changed the way in which people carry out transactions, investments, and savings by introducing services such as Unified Payments Interface (UPI), Mobile Wallets, Net Banking, PoS, Prepaid Cards, etc.

Cashless economy arrival parts with the drivers and the role that demonetization plays. India's idea of being a cashless country began by getting momentum from the Digital India launch in 2015, which worked toward extending the digital infrastructure and penetrating the Internet (Kumari, Singh, & Ahamad, 2024). However, the biggest push came through demonetization in 2016, which rendered invalid currency notes of ₹500 and ₹1000. This again disrupted the economy, forcing people/businesses to adopt digital payment modes (Routray et al. 2019). Fintech adoption had emerged with great gusto during the demonetisation period, especially UPI and mobile wallets. Both the government and fintechs stepped up to the plate and came up with all kinds of empirical incentives such as cashback, discounts, and tax benefits for digital payments. Meanwhile, modernisation in cybersecurity and penetration of smartphones have continued to accelerate this change, helping place India at the top of the list of global positioning for digital payment systems.

In the context of an economy like India that has primarily been reliant on cash for all transactions, feasibility of a cashless economy refers to how practical and viable it is for the country to transition completely from a cash-dominant to a cashless economy. Feasibility is not only about the theoretical advantages that being cashless can bring about for an economy like India, but also taking into consideration real-world factors that may influence the complete adoption of digital payment solutions for a successful transformation.

2 REVIEWS OF LITERATURE

The 21st century has witnessed a significant transformation in the financial services sector, with fintech playing a crucial role in driving innovation and enabling a cashless economy in India, ultimately reshaping the traditional economy. Valued at ₹2000 billion in 2019, the Indian Fintech market is projected to reach ₹6000 billion by 2025, supported by Digital Payments, P2P Lending, Insurtech, and Wealth tech. While some sectors faced dips in growth during the COVID-19 pandemic, essential services like healthcare and groceries saw growth, leaving overall fintech adoption set for lift-off (Singh, 2020). (Priya and Anusha, 2019) outlined that the transformational role of fintech includes cost efficiency and accessibility, but challenges remain in infrastructure gaps and financial literacy. Despite the hurdles, India ranks second in the world in terms of fintech adoption.

Even with the advancements in fintech, a huge section of the Indian population is still in the Real world. There is a high prevalence of cash dependency, especially in rural areas, which employ 90 percent of India's workforce. Cultural preference and tax evasion concerns further prevent merchants from adopting cashless transactions. (Garg and Panchal, 2017).

From More than a few perspectives, the digital economy of India was analysed (Sheerin, 2018) by utilising data from the RBI for the years 2013 to 2018, which indicates rapid adoption of UPI and mobile banking after demonetisation, while NEFT and RTGS bore the brunt of it. Still, challenges remained regarding internet reach in rural areas, awareness problems, and cybersecurity implementations.

With the boost of Government initiatives and technology, acceptance of Fintech received a maximum fillip during the pandemic (Nair et al., 2021); still, the cash-reliant nature of the unorganised sector prevents an outright full-scale fintech development.

According to a study carried out by (Haritha, Ramamurthy, and Hari, 2022), Bengaluru is a fintech hub that has undergone qualitative and quantitative analysis. Challenges recognized included cyber threats, regulations, and trust issues, compelling for innovation and collaboration for sustaining the fintech leadership of the city. According to Aggarwal, Nayak, and Bhatt (2023), an analysis of the adoption of fintech systems among Gen Y in India was carried out with the help of data collected from 349 students, substantially analysed by Smart PLS 4. The study found the quality of information to be of utmost importance while emphasising user-friendly solutions, dynamic to the socio-economic setting of fintech applications.

Raj and Upadhyay (2020) have emphasised the importance of collaborating banks and Fintech for achieving sustainable growth. According to them, digital payments lead to other services such as insurance, lending, and wealth management through transaction data.' Kandpal & Mehrotra (2019) also analysed the various government initiatives, the most important of which is that of the 2016 Demonetization, in driving cashless transactions and inspiring the innovation of Fintech. Furthermore, this became the impetus for worldwide investment in Fintech-as India experienced an astonishing growth of 282 per cent in 2013-2014. The role of "Trust, Usability, and Social Influence" in fintech adoption has been studied by Asif et al. (2023), who developed a model that would include the rural users in financial decisions, mostly because the respondents can benefit from the user-friendly design.

Mukhopadhyay (2016) suggested a theoretical model for cashless adoption, reporting a negative relationship between cashless transactions and the shadow economy; thus, higher taxes could be imposed in a cashless economy. Chaudhary (2022) has revealed the status of digital payments in India and predicts that 58percent of transactions will be done digitally by 2025, with platforms such as Google Pay, Paytm, and PhonePe leading this advancement. Further, the study discusses acceleration due to pandemic challenges like limited infrastructure facilities and oral accessibility.

Thus, in the view of Kumar and Chakravarthi (2019), digitisation, particularly digital payment, stood as a stronghold of economic modernisation and transparency in India. As a growth driver, digital payments place additional pressure on user-friendly and secure solutions. Nishad and Mude (2022) analysed shifts from cash to digital payments in India after the demonetization of November 2016. It brought innovations such as UPI and mobile wallets. The study was a survey and secondary data-based. Mentioned were incorrect infrastructures and cybersecurity threats that must be addressed, with a call to tackle unorganised sector concerns, besides reaching rural areas.

According to (Gomathinayagam and Selvi, 2019), digital payment growth in India is limited by infrastructure problems, awareness, knowledge, and so on. Better internet access has to be recognised as a key element to digital payment convenience or user-friendliness for the end of a person. Thomas and Krishnamurthi (2017) highlighted the potential in the rural economy for a cashless transition, indicating the necessity of government initiatives and policy leverages towards making rural sections digitally included in payment systems.

Routray et al. (2019) observed that information quality relating to the user's perception of a mobile wallet in terms of usefulness affects the perceived security according to system and service quality. Jayalakshmi and Venkateswarlu (2018) also added to the ongoing debate regarding cashless transition in India, which was considered to have decreased corruption and greatly increased financial inclusion. Recommended based on secondary data analysis are policy redesigning and the development of cybersecurity features as a means of addressing the challenges.

Madhavedi et al. (2024) examined factors influencing cashless payment adoption among merchants in Hyderabad, identifying technology growth, security concerns, and market competition as key drivers. The study encourages merchants to adopt digital payments to enhance market share and business operations. Singhraul and Garwal (2018) discussed challenges and opportunities in India’s cashless economy, emphasising the need for bank access, internet connectivity, and financial literacy. They highlighted cashless transactions in improving transparency and reducing black money.

Aggarwal et al. (2020) explored how technological advancements and the 2016 Demonetization accelerated India’s shift to a digital economy. Using descriptive statistics and variance analysis, they identified key factors influencing digital payment satisfaction. Kumar, Ramyashree, and Bhat (2023) critically reviewed India’s cashless transition, noting a 58.9 percent CAGR in digital payments by 2019. The study highlighted digital payment modes like UPI and mobile wallets and stressed the need for better infrastructure and fintech initiatives for inclusive growth. Gautam and Rawat (2017) studied the immediate consequences of the 2016 demonetization, highlighting the cash crunch followed by this

effect and the cashless economy advantages of lower tax evasion, lesser currency management cost, and counterfeiting.

According to Kumar and Puttanna (2018), post-demonetization transformation of payment systems in the country has resulted in a setback in terms of entry into electronic transactions, accompanied by other negative factors like low digital literacy and underdeveloped infrastructure. They, therefore, recommended action policies which could include the following: a gradual phase-out of high-value currency notes and reducing transaction costs toward a less cash economy.

Kumari, Singh, and Ahamad (2024) emphasised digital innovations ushered in by demonetization, indicating significant growth in digital payments and corresponding increases in the Digital Payments Index of the Reserve Bank of India (RBI). They identified cybersecurity threats, digital knowledge gaps, and financial exclusion from rural areas as the greatest obstacles, suggesting the need for digital literacy campaigns and adding blockchain applications. Kakade and Veshne (2017) examine the function that UPI plays in the transformation that digital payments are undergoing. They argued that UPI took off rapidly after demonetization and during COVID-19. The study brings to focus issues such as limited digital literacy and poor rural infrastructure.

Franciska and Sahayaselvi (2017) discussed the need for digital payment systems and said the advantages include speed, safety, and visibility of transactions. The authors indicated further penetration in mobile networks and internet services in rural areas as part of the enablers. UPI Adoption in Chennai draws a study by Harikrishnan (2023), where efficiency, speed, and security were primarily found as UPI drivers on the user-friendliness scale. Most existed through Google Pay for cashbacks and rewards for young people adopting UPI. The study also noted bank server issues as one major challenge.

The article by Gupta, Kapoor, and Yadav (2020) examines the journey of India towards a cashless economy under the ‘Digital India’ initiative by the government. The study highlights the advancements and innovations in the digital payment system, like UPI, mobile wallets, and banking cards. Despite this progress, there are many barriers faced, such as a high cash dependency ratio (11.4 percent cash to GDP ratio was noted in 2019). The authors propose a blockchain-based digital wallet model, which will increase security and reliability.

3 RESEARCH DESIGN

3.1 NEED OF THE STUDY

As India transitions toward a cashless economy, digital payment platforms such as GPay, PhonePe, Paytm, and BharatPe play a crucial role in this shift. This growing reliance on fintech services highlights the potential of a truly cashless economy in India. However, there still remains a lingering reliance on cash. Hurdles relating to merchant trust, accessibility within the unorganised sector, and limitations in infrastructure still pose an issue for those who have already converted to the cashless ways, especially the youth of the 21st century. This highlights the need to evaluate these challenges in the context of whether they support or hinder the transformation of India into a truly cashless economy.

3.2 RESEARCH QUESTIONS

To evaluate the integration of Fintech-enabled digital payment apps within students, homemakers, and working professionals with special reference to Bengaluru city.

- To identify the barriers affecting India's transition to a fully cashless economy.
- To assess the readiness and feasibility of the current economy to turn fully cashless.

3.3 RESEARCH GAP

The existing literature deals with providing an overview of how financial services introduced digital payments to the people of India, and how they are playing a crucial role in transforming the cash-reliant Indian economy into a cashless one. However, adequate research has not been conducted to analyse the integration of these digital payment services to help understand if India is ready for a truly cashless economy. This research aims to tie together the known hurdles hindering the transition of the Indian economy into a cashless one with the current integration levels of digital payment services to understand if it is feasible for India to turn truly cashless.

3.4 RESEARCH METHODOLOGY

This research incorporates two types of research to provide a comprehensive overview of the current facts and also expand on them, as Exploratory Research and Descriptive Research. Exploratory Research - This will help understand the current state of the economy regarding the evolution of Fintech in India. Descriptive Research - This will help in analysing the general public's perception of a cashless economy and factors that may influence or deter consumer payment behaviour. To be able to achieve the two primary objectives of this research, i.e. to evaluate the integration of Fintech-enabled digital payment apps within students, homemakers, and working professionals with special reference to Bengaluru city, and to assess the readiness and feasibility of the current economy to turn completely cashless, the study has employed the way of a survey.

To achieve the secondary objectives of this research, i.e. to understand the foundation of Cashless Economy and advancements in Fintech in India, academic literature in the form of journals and articles were reviewed thoroughly to gain a deeper understanding into the evolution of Fintech in India and the role it has played to accelerate the transition to a cashless economy. Additionally, qualitative research and analysis of the questionnaire helped achieve the other objective of this research, i.e. to identify the barriers affecting India's transition to a fully cashless economy. This happened through evaluating the factors hindering the complete adoption of digital payment methods covered in previous studies, but also assessing the feedback from the respondents in the questionnaire.

3.4.1 Data Collection:

A questionnaire was created to collect the required data from various individuals encompassing the following demographics:

- Age Groups: Youth (18–25) and Adults (26–65)
- Economic Segments: Urban and Rural
- Education Levels: Literate and Semi-literate

- Occupations: Students, Working Professionals, Homemakers.

The questionnaire also collected essential information that assessed the current adoption level of Fintech-enabled digital payment apps to help evaluate the readiness of the economy to be able to turn completely cashless. This was done through close-ended, dichotomous, and Likert scale questions.

3.4.2 Sample Size & Method:

The survey circulated through Google Forms was limited to 100 responses, which formed the sample size. The sampling was achieved through non-probability sampling, specifically a mix of convenience and snowball sampling.

3.4.3 Data Analysis:

Data handling and Statistical tools that will be used for analysing the data are:

- Google Forms for collecting survey responses.
- MS Excel for data cleaning, analysis, and visualisation of survey responses.
- SPSS for advanced analysis of data, such as correlation analysis.
- MS Word for data handling and visualisation.

4 RESULTS AND DISCUSSION

The survey collected responses for a wide variety of questions from 100 respondents. To gain a comprehensive understanding of the backgrounds of the respondents, a demographic analysis was conducted. This also aided further analysis of the other sections of the survey.

4.1 SUMMARY OF DEMOGRAPHIC ANALYSIS

The majority of respondents (61 per cent) fall within the 18-25 age bracket, followed by 20 percent in the 26-45 category. It is important to note that younger individuals are typically more adaptable to fintech solutions and digital payments, which could be a recurring theme in the later analyses. The gender distribution is 55 per cent female and 45 percent male, showing a relatively balanced perspective. A nearly equal gender split suggests that the study captures fintech adoption trends across both male and female users.

A significant 97 percent of respondents are from urban areas, while only 3 percent represent rural areas. Since Bengaluru is a highly urbanised city, the heavy urban representation aligns well with the study's focus. However, rural areas still have limited fintech penetration due to issues like digital literacy, internet access, and banking infrastructure. The majority of respondents are students (61percent), highlighting that a large portion of the surveyed population is young and likely tech-savvy. This coincides with 61percent of the respondents falling in the 18-25 age bracket. This is significant for a cashless economy because younger generations are more adaptable to digital payment methods.

Full-Time Private Employees (15 percent) group represents working professionals who earn a salary and are likely to have bank accounts, credit/debit cards, and access to fintech services. This also means they are accustomed to using digital payments for daily

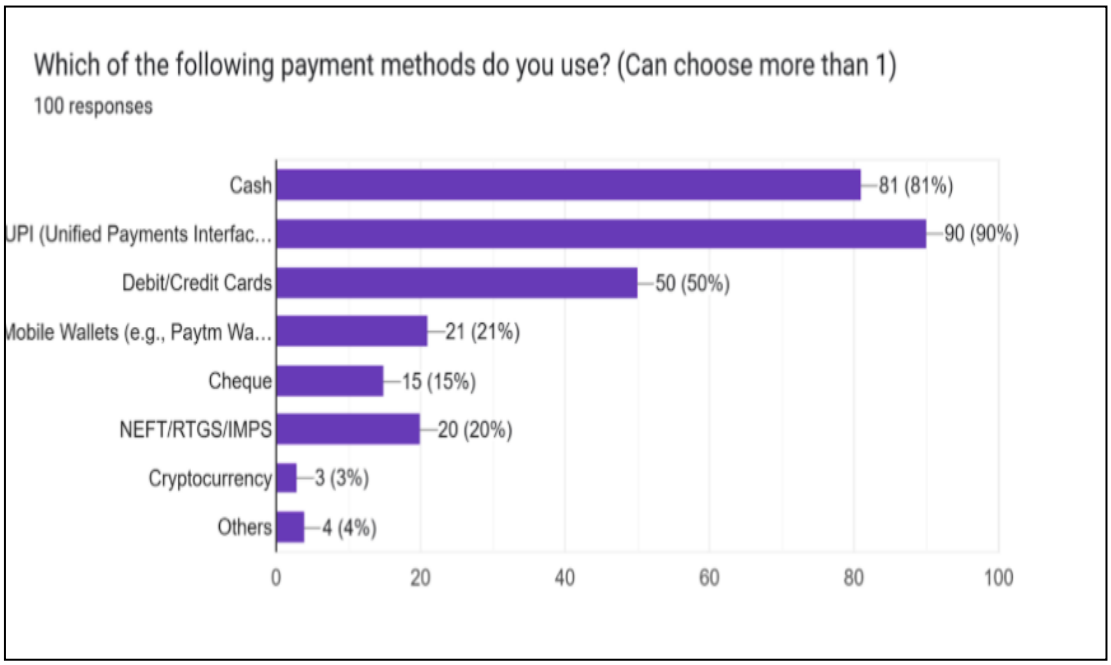
transactions. Self-Employed/Business Owners (9 percent) and Homemakers (7 percent) form a smaller portion of the sample.

Monthly Allowance from a parent or guardian (45 per cent) forms the largest proportion of the source of income of respondents. This suggests that a significant portion of the surveyed population consists of students or young adults who may not yet be financially independent. A substantial percentage of respondents earn a salary from Employment (21percent), indicating financial independence and stability. Others (15percent) include varied sources of income, such as gig work, informal jobs, or multiple smaller income streams. Entrepreneurs and business owners (12 percent) form a small, important segment of the sample.

4.2 FINTECH INTEGRATION ANALYSIS

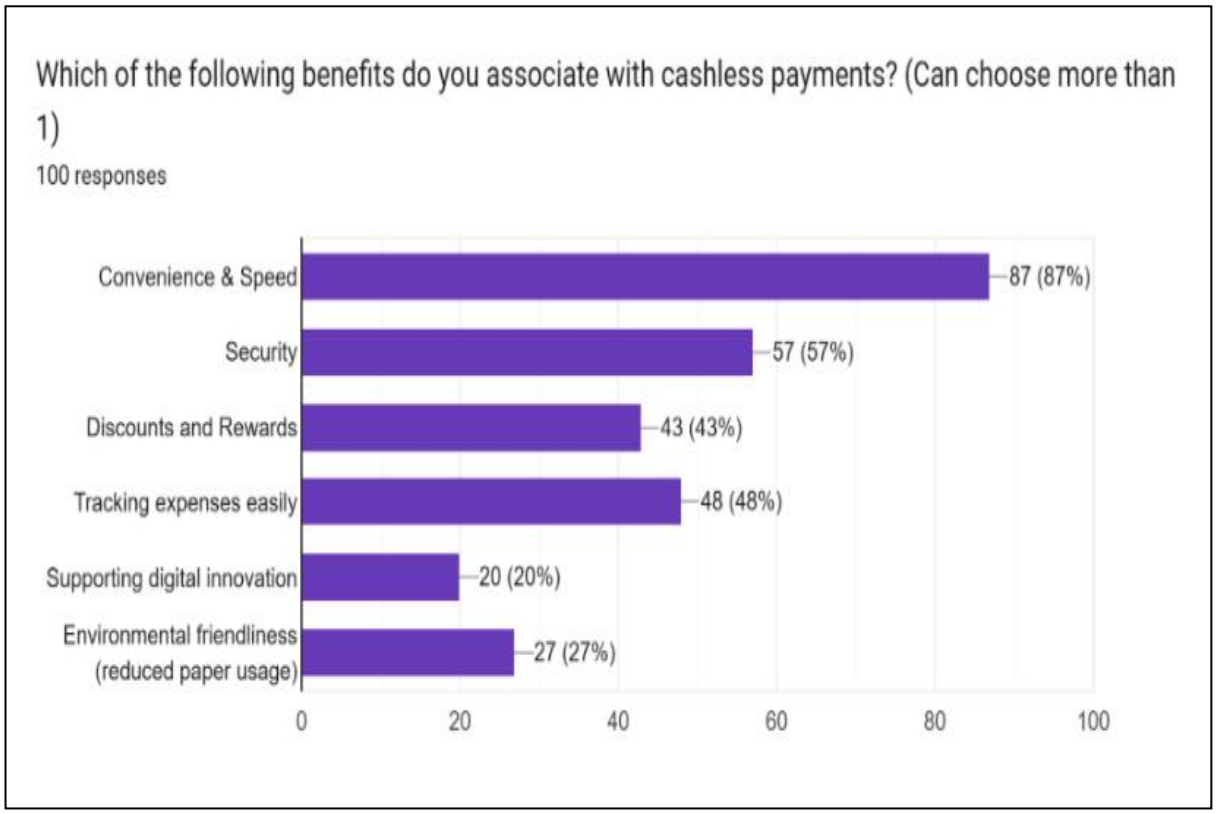
To achieve the primary objective of this research, i.e. to evaluate the integration of Fintech-enabled digital payment apps within students, homemakers, and working professionals with special reference to Bengaluru city, the survey included a section titled 'Fintech Integration' in the Google Form. This section contains important questions that will help assess the reach of Fintech services and their integration among the sample.

Figure 1: Bar Graph representing the choice of payment methods used by respondents



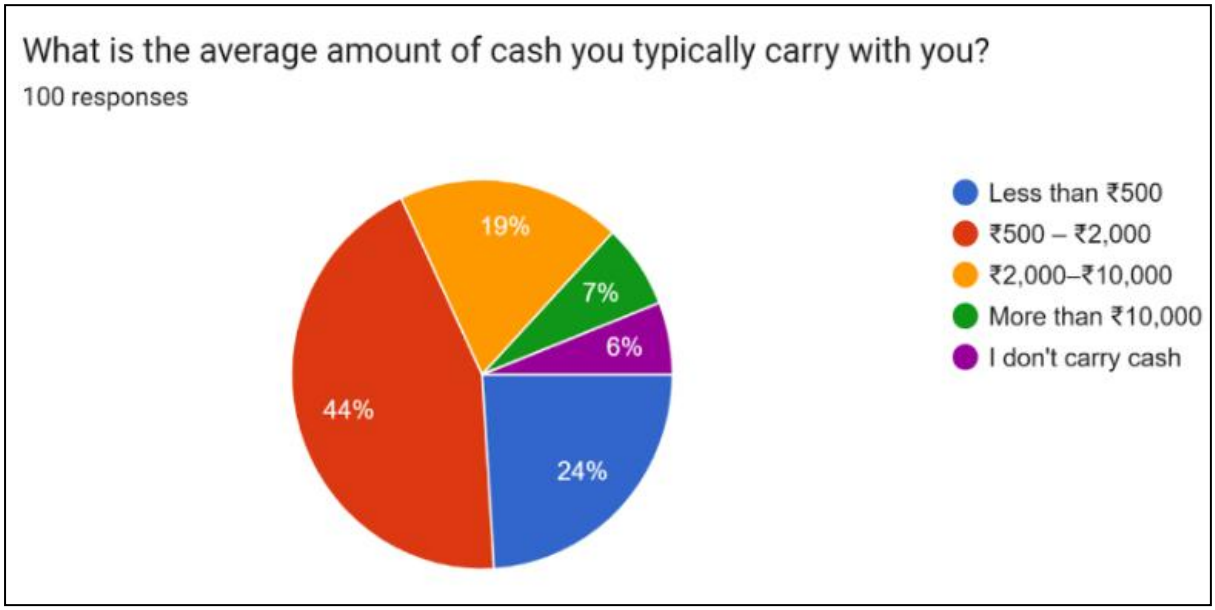
UPI (90 responses) emerges as the most used payment method, with Debit/Credit Cards (50 responses) being one of the other top choices for payment methods. However, Cash (80 responses) emerged with the most responses after UPI and before Debit/Credit Cards.

Figure 2: Bar Graph representing the benefits associated with cashless payment methods by respondents



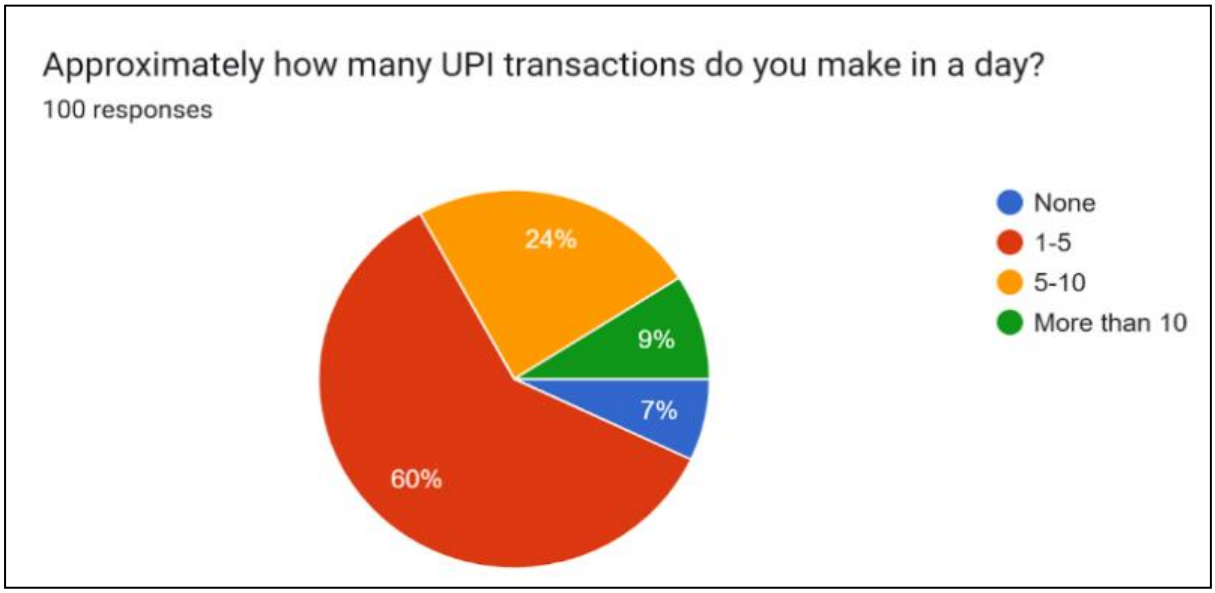
87 responses relating to convenience and speed highlight them as a primary advantage of cashless payments. 57 responses included Security as a benefit. While it is a significant factor, it is not as highly prioritized as convenience, indicating some lingering concerns about fraud or cybersecurity. 48 responses believe that cashless payments help them track expenses better, with 43 responses indicating a positive association of cashless payments with discounts and rewards. Only 27 responses linked cashless payments to reduced paper usage, indicating that environmental concerns are not a primary motivator for digital payment adoption.

Figure 3: Pie Chart representing the average amount of cash carried by respondents



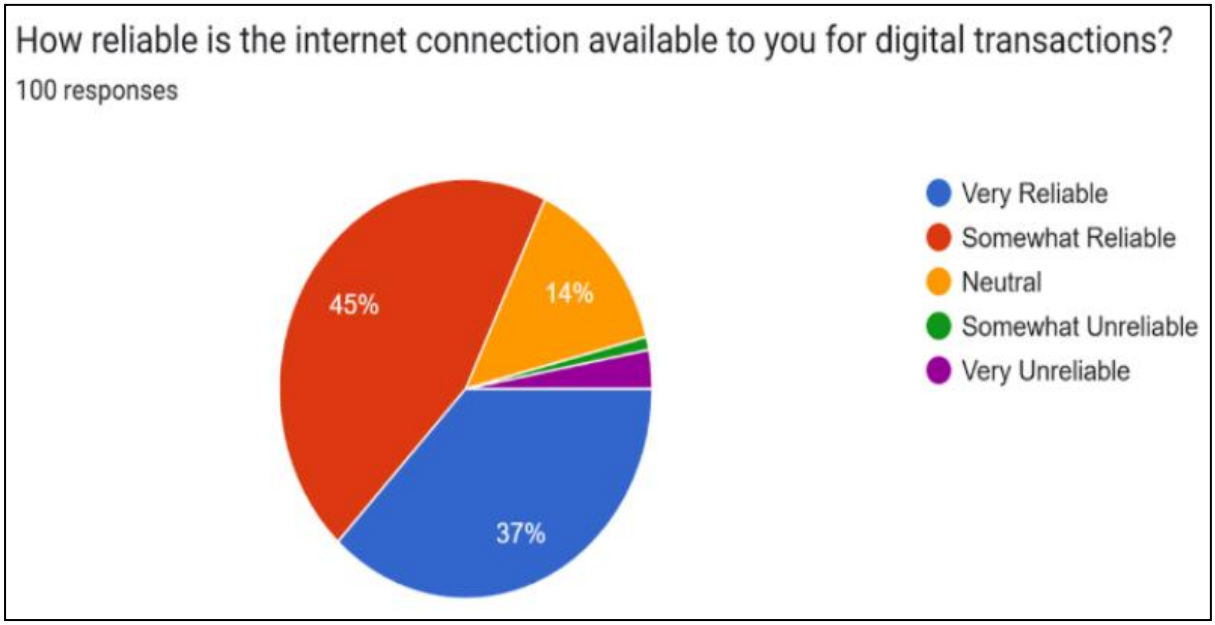
24 per cent of respondents carrying less than ₹500 indicates a small shift towards reduced cash dependency, whereas 6 per cent of respondents reported that they do not carry any cash. 44 per cent of respondents carry a decent amount of cash, signalling semi-dependency on digital payments.

Figure 4: Pie Chart representing the number of UPI transactions made by respondents daily



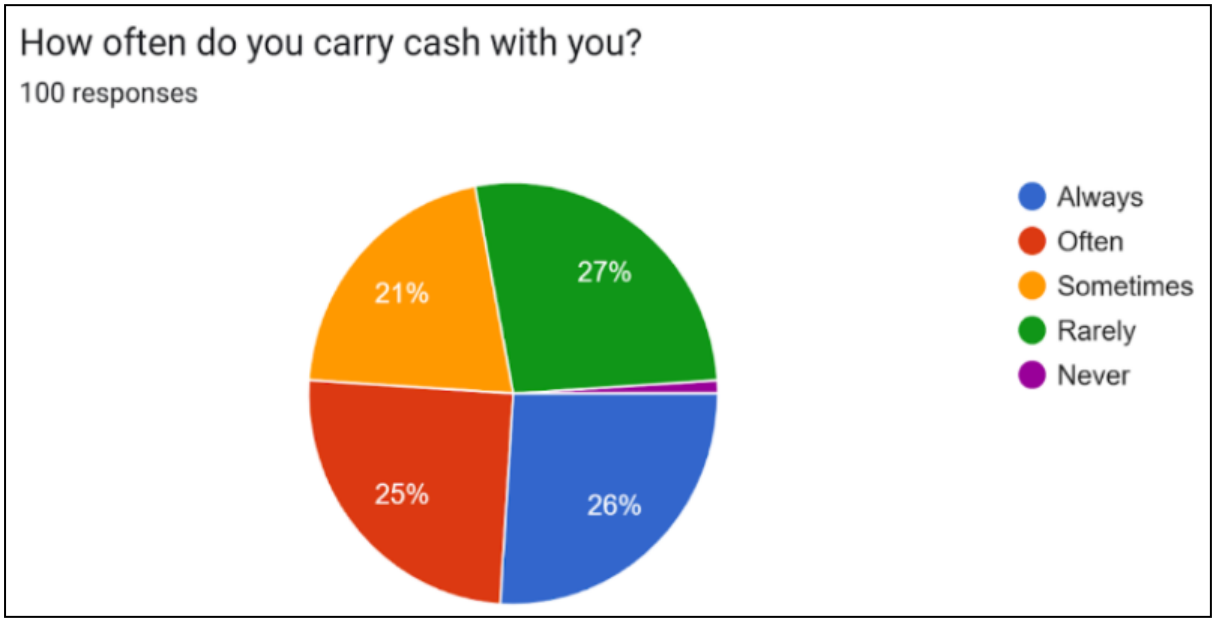
60 per cent of respondents make 1-5 UPI transactions per day, indicating that digital payments are a regular part of their financial activities. A significant 24 per cent make more than 10 transactions daily, and 9 per cent make 5-10 transactions daily, showing a high level of fintech adoption. It is important to note that 7 per cent of respondents do not make UPI transactions.

Figure 5: Pie Chart representing the reliability of the internet connection available to respondents



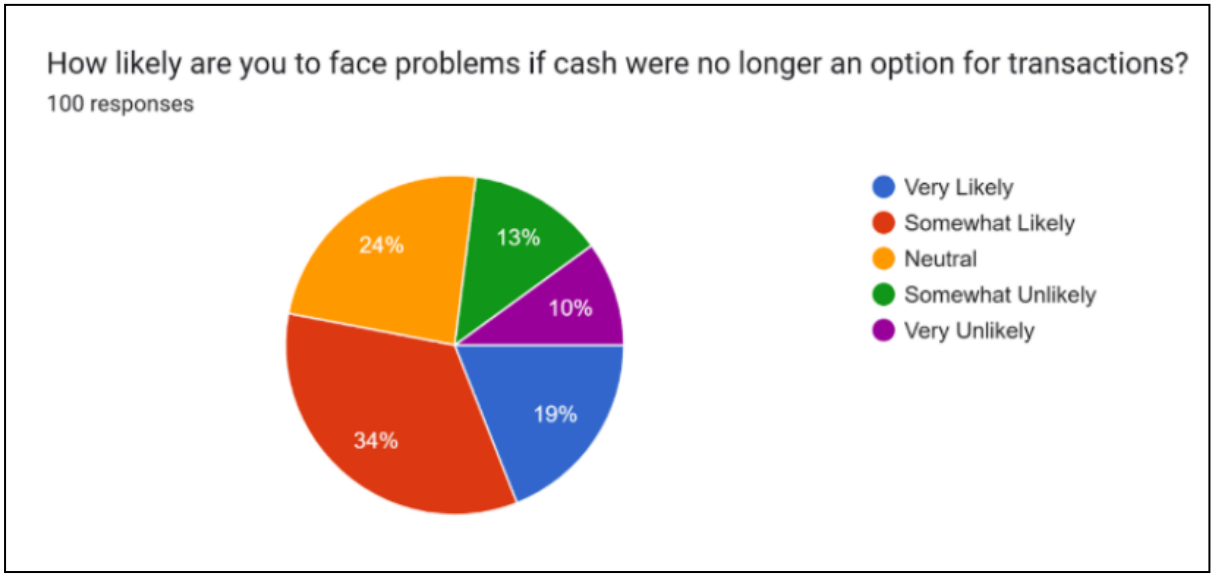
45 percent of respondents find their internet connection "Somewhat Reliable", indicating that while it generally works, occasional issues might still affect digital transactions. This somewhat coincides with Fig.3, where a significant portion of respondents carry a decent amount of cash. 37 per cent consider their internet connection "Very Reliable", suggesting that a large portion of users experience seamless connectivity, enabling smooth fintech integration.

Figure 6: Pie Chart representing how often cash is carried by respondents



27 per cent of respondents "Rarely" carry cash, indicating a strong shift towards digital payment methods, in contrast to 26 per cent of respondents who "Always" carry cash, showing a substantial portion of people still feel the need for physical currency. A very small percentage (less than 1 per cent) "Never" carry cash, highlighting that complete cash avoidance is not yet widespread.

Figure 7: Pie Chart representing the likelihood of problems faced by respondents if cash were not available



34 per cent of respondents are 'Somewhat Likely' to face problems if cash is eliminated, and 19 per cent are 'Very Likely' to experience difficulties, indicating a significant portion still relies on cash. 10 per cent of respondents say 'Very Unlikely', suggesting they are already comfortable with digital payments.

Correlation Analysis:

Variables: How likely respondents are to face problems if cash were no longer an option for transactions (VAR00008) AND How often do respondents carry cash (VAR00009)

Correlations

			VAR00008	VAR00009
Spearman's rho	VAR00008	Correlation Coefficient	1.000	.281**
		Sig. (2-tailed)	.	.005
		N	100	100
	VAR00009	Correlation Coefficient	.281**	1.000
		Sig. (2-tailed)	.005	.
		N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

The above correlation analysis conducted by SPSS reveals a correlation of 0.281. A positive correlation indicates that as respondents carry cash more frequently, they are slightly more likely to face problems if cash were no longer available as an option of payment. It is important to note that the correlation value of 0.281 denotes a weak positive correlation between the two variables, but a p-value of 0.005 states that the correlation is statistically significant.

4.3 CASH DEPENDENCY ANALYSIS

As part of achieving one of the objectives of this research, i.e. to assess the readiness and feasibility of the current economy to turn completely cashless, the survey included a section titled 'Cash Dependency' in the Google Form. This section contains scenario-based questions and collected responses in the Likert Scale to help assess how dependent the respondents still are on cash by analysing their attitudes under each scenario.

Likert Scale responses were coded as follows:

1. Strongly Agree - 5
2. Agree - 4
3. Neutral - 3
4. Disagree - 2
5. Strongly Disagree - 1

Total scores were computed by the following formula:

$$\Sigma(f_i \times Likert\ Scale\ Score)$$

Mean scores were then calculated by the following formula:

$$\Sigma(f_i \times Likert\ Scale\ Score) \div No.of\ Respondents$$

Where,

No. of Respondents = Sample Size = 100

From the tabulated results, it is clear that the respondents in general had a positive attitude towards all the scenarios. These scenarios were developed by keeping in mind common situations where cash transactions may still be preferred. Respondents only showcased a Neutral Attitude in Scenario 4, Scenario 8, and Scenario 10, whereas all other Scenarios reflected a Positive Attitude. The lowest mean score was obtained in Scenario 8, with the highest mean score being in Scenario 7.

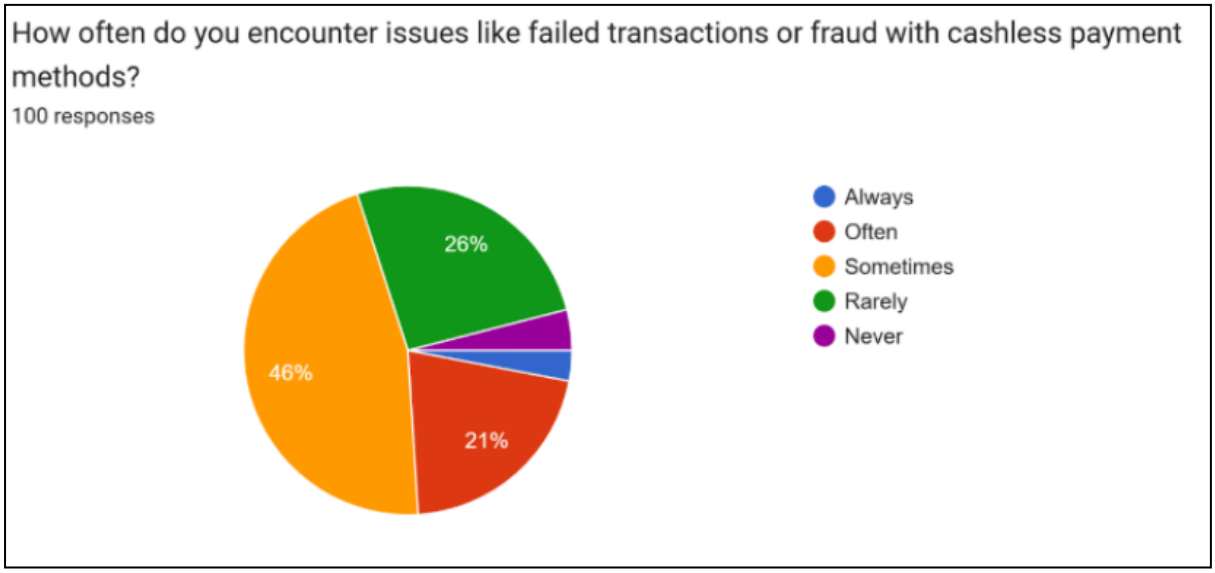
Figure 8: Table representing the Total and Mean Likert Scores of questions posed to respondents

S. No.	QUESTIONS	1		2		3		4		5		Total Scores	Mean Scores	Attitude
		(F)	(F*Score)	(F)	(F*Score)	(F)	(F*Score)	(F)	(F*Score)	(F)	(F*Score)			
1	I would carry cash with me when going to make a purchase at tea stalls or roadside eateries.	3	3	21	42	24	72	26	104	26	130	351	3.51	Positive Attitude
2	I would carry cash with me when visiting a religious place of worship to make offerings or donations.	1	1	3	6	11	33	47	188	38	190	418	4.18	Positive Attitude
3	I would keep cash with me when giving a tip to any delivery personnel (Food delivery, Courier services etc.)	2	2	16	32	26	78	39	156	17	85	353	3.53	Positive Attitude
4	I would carry cash with me when going to make purchase of vegetables or fruits from a roadside vendor.	3	3	25	50	18	54	41	164	13	65	336	3.36	Neutral Attitude
5	I would carry cash with me when opting to travel by public transportation (Bus, Metro etc.)	3	3	8	16	21	63	46	184	22	110	376	3.76	Positive Attitude
6	I would use cash to give money as a gift (Weddings, Birthdays etc.)	3	3	10	20	17	51	41	164	29	145	383	3.83	Positive Attitude
7	I would carry cash with me when travelling to a remote location or village that is likely to have a bad network.	1	1	2	4	9	27	36	144	52	260	436	4.36	Positive Attitude
8	I would carry cash with me for using vending machines that are accessible to me daily (At the workplace, In public areas, Subway stations etc.)	9	9	33	66	23	69	25	100	10	50	294	2.94	Neutral Attitude
9	I would carry cash with me when going out to pay for parking at informal parking lots.	2	2	12	24	28	84	43	172	15	75	357	3.57	Positive Attitude
10	I would carry cash with me when opting to travel in an auto-rickshaw or taxi.	8	8	20	40	20	60	41	164	11	55	327	3.27	Neutral Attitude
	Overall Mean Score												3.63	Positive Attitude
	1.0-2.4 (Negative Attitude), 2.5-3.4 (Neutral Attitude), and 3.5-5.0 (Positive Attitude)													

4.4 FUTURE OF CASHLESS ECONOMY ANALYSIS

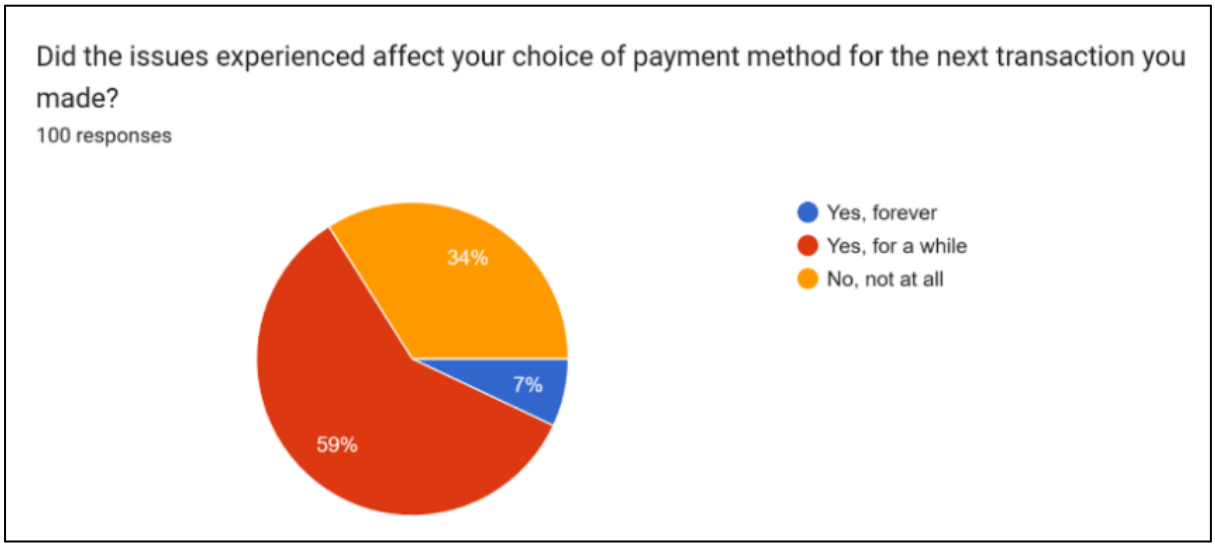
As part of achieving one of the objectives of this research, i.e. to identify the barriers affecting India's transition to a fully cashless economy, the survey included a section titled 'Future of Cashless Economy'. This section contains questions to understand the current barriers faced in relation to cashless payment methods, and what the biggest hindrances are in India's transition to a truly cashless economy.

Figure 9: Pie Chart representing how often respondents face issues with cashless payment methods



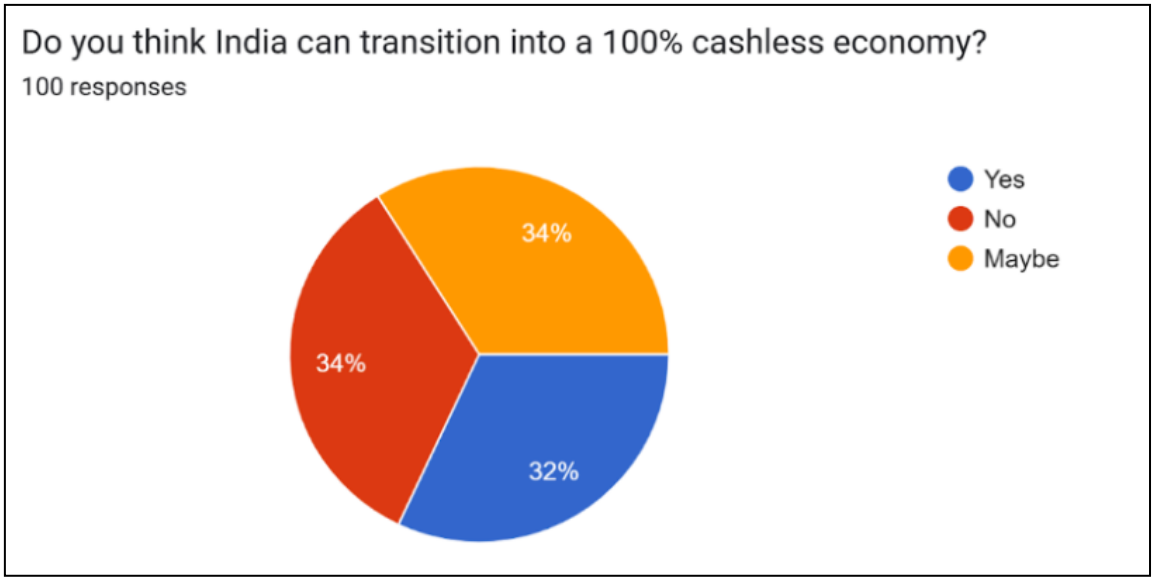
46 percent of respondents report facing issues sometimes, with 21 percent of respondents experiencing issues often. A very small portion of the respondents report encountering issues always.

Figure 10: Pie Chart representing the experience of respondents after facing issues with cashless payments



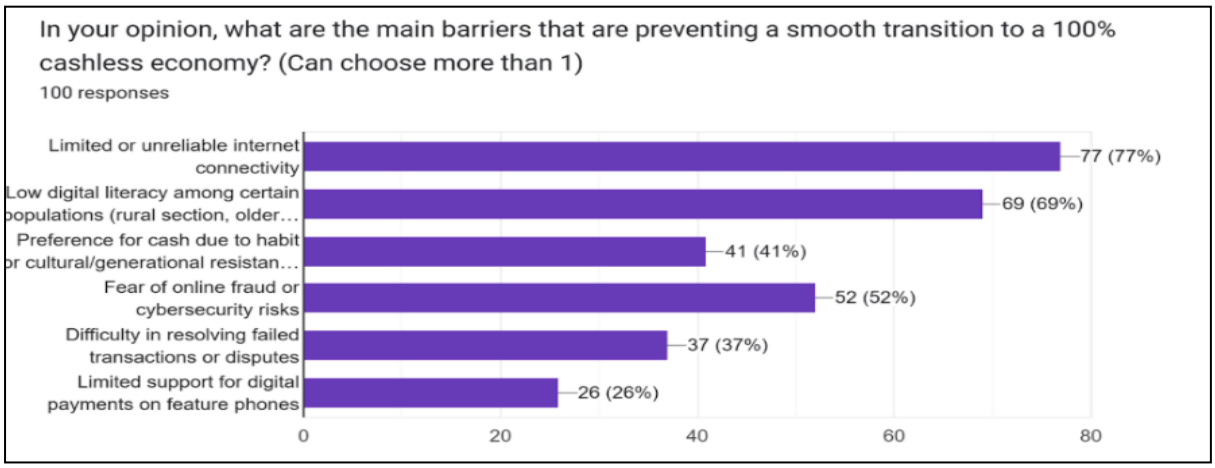
59 per cent of respondents changed their payment method for a while before returning to cashless transactions. 34 per cent of respondents said that the issues did not affect their next payment choice at all. 7 per cent of respondents stated that they stopped using digital payments permanently due to past issues, highlighting a need for improved security, reliability, and consumer protection.

Figure 11: Pie Chart representing the opinion of respondents on India turning 100 per cent cashless



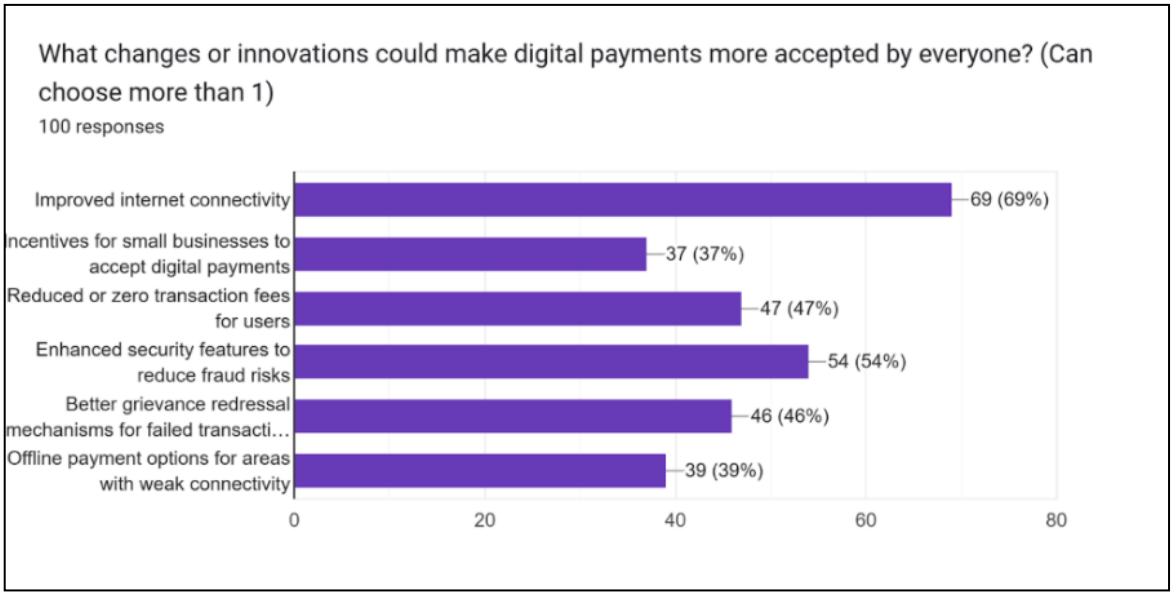
There is an equal split (34percent) between respondents rejecting the possibility of a fully cashless economy and respondents being uncertain. 32percent believe that India can transition into a 100 percent cashless economy.

Figure 12: Bar Graph representing the main barriers preventing a smooth transition to 100percent cashless economy



The biggest barrier (77 responses) is unstable internet access, particularly in rural and remote areas. A significant portion (69 responses) believe that low rates of digital literacy among sections of the population, like rural communities and older generations, are a major barrier to a truly cashless economy. Trust issues regarding online fraud and cybersecurity risks remain a major concern (52 responses). This is further supported by people hesitating to rely on digital payments due to the complexity and inadequacy of redressal mechanisms (37 responses). Many individuals (41 responses), especially in traditional or informal sectors, prefer cash transactions out of habit or cultural familiarity.

Figure 13: Bar Graph representing the possible changes to be made to the digital payment space according to respondents

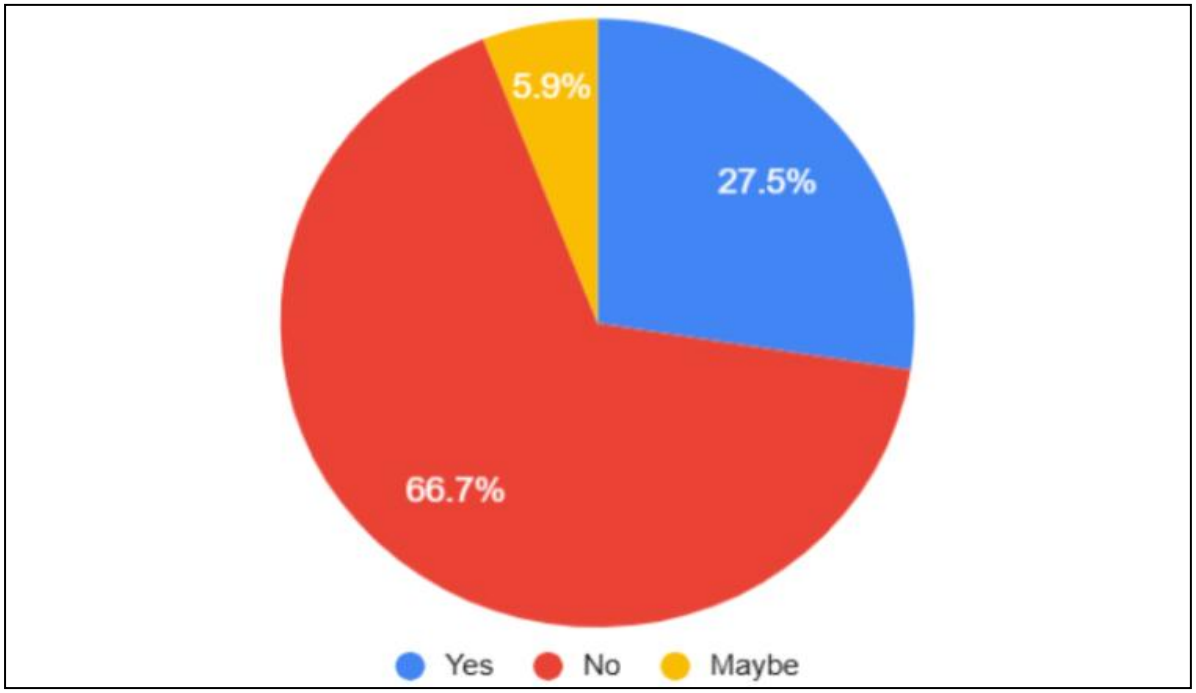


The most crucial factor is better internet infrastructure (69 responses), particularly in rural and remote areas. Reliable connectivity is essential for seamless transactions, reducing failures due to poor networks. According to 54 responses, strengthening cybersecurity measures, fraud detection, and user protection policies can increase trust in digital payments. This is further supported by 46 responses stating that a faster, automated, and more transparent grievance system could enhance confidence in digital transactions. 47 responses suggest that introducing zero or minimal charges for UPI, wallets, and card payments would encourage wider adoption. Additionally, offline payment options for areas with weak connectivity can be a major improvement, according to 39 responses.

The survey concluded with an optional open-ended question: *"Do you think a 100percent cashless economy would be fair to all socioeconomic groups? Why or why not?"*

This allowed respondents to share their opinions on whether implementing a 100percent cashless economy would be fair and justified to all socioeconomic groups given the current state of the economy and policies already in place.

Figure 14: Pie Chart representing the opinion of respondents on if a 100percent cashless economy would be fair to all socioeconomic groups



Out of 100 total respondents of the survey, 51 percent answered the open-ended question. The responses were evaluated individually and coded under 3 main answers: “Yes”, “No”, and “Maybe”. This gives rise to Fig.14, which shows that 66.7 percent of the respondents believe a 100 percent cashless economy would not be fair to all socioeconomic groups.

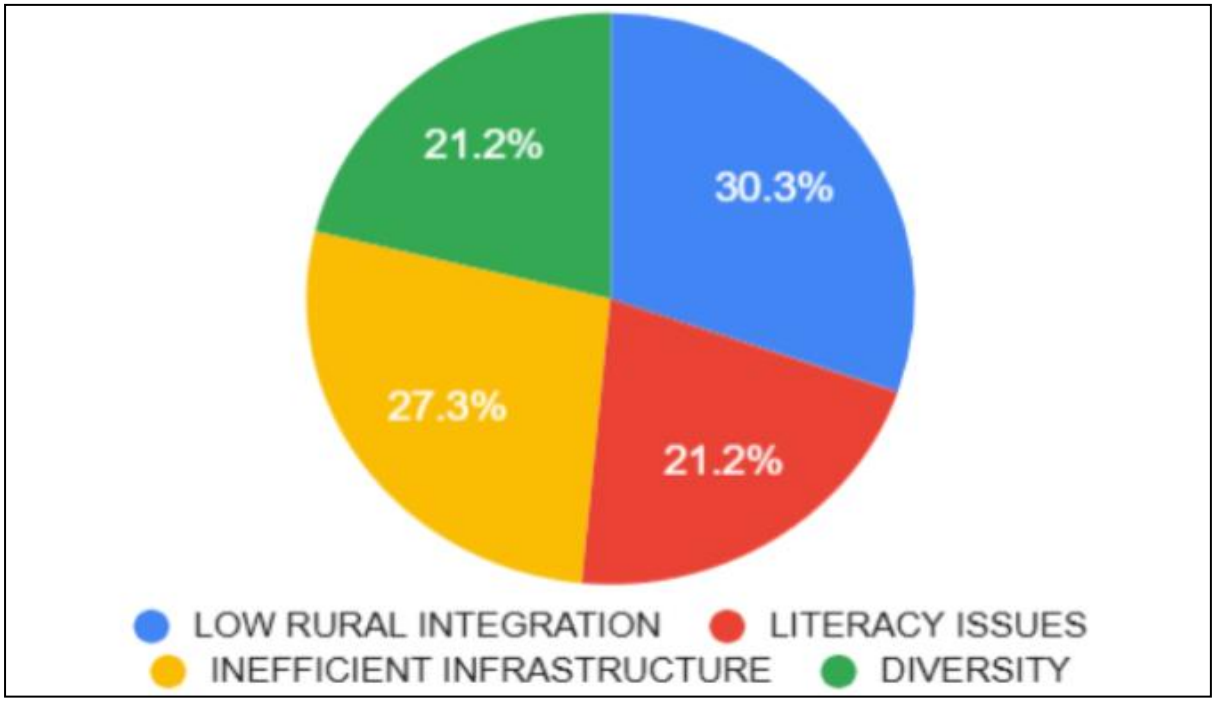
Quoting some responses, we have:

“It would be unfair to assume a sudden implementation of a 100percent cashless economy would work out for all socioeconomic groups in a diverse country like India. It might be a slow and steady process, one which should be informed at all stages of integration so it does not come as a shock.”

“I don't think a 100percent cashless economy would be fair to all socioeconomic groups- It would be unreasonable to assume that daily wage labourers would use cashless/digital mechanisms with the same degree of acceptance/proficiency as an employee who probably works in an MNC and resides in the city.”

“The government is currently taking a lot of initiatives to promote cashless payments, but given the percentage of illiteracy and the heavy dependence on cash in underprivileged areas, I think the possibility of a fully cashless economy is not possible, at least in the near future. The diversity of our population will not allow for a transition.”

Figure 15: Pie Chart representing recurring themes among the open-ended answers to if a 100percent cashless economy would be fair to all socioeconomic groups



The responses were evaluated individually to identify recurring themes in the responses, and then coded under 4 main identified themes: "Low Rural Integration", "Literacy Issues", "Inefficient Infrastructure", and "Diversity". This gives rise to the above Pie Chart, which shows an almost equal split among all themes, with "Low Rural Integration" being the most recurring theme.

Interestingly, 27.5percent of the respondents believe a 100percent cashless economy would be fair to all socioeconomic groups, with 5.9percent not taking a particular stance.

Quoting some responses, we have:

"Yes, it might be a fair move as it will bring about transparency in the economy."

"Yes. As we can already see an unprecedented increase in its usage among the lower classes already and this is estimated to grow furthermore. In addition, cashless transactions would help mitigate the issues of corruption and black money."

"A 100percent cashless economy has its own pros and cons. The pros can be the increased monetary records and return filings amongst the population due to increased availability of data to the government of people's spendings and income. The cons would be the increased unwanted spending by the consumers as the act becomes easier."

"When we reach 100percent digital and financial literacy, a 100percent cashless economy would be fair for all socio economic groups."

4.5: CROSS-SECTIONAL ANALYSIS

4.5.1 Distinction of opinion of respondents on India transitioning into a 100 percent cashless economy according to the age groups comprising the sample.

Table 16: Representing the opinion of respondents on India transitioning into a 100 percent cashless economy according to age groups

Age	Yes	No	Maybe
<18	2	2	1
18-25	20	20	21
26-45	9	5	6
46-65	1	5	7
>65	0	1	0

The 18-25 age group shows a nearly equal split among "Yes" (20), "No" (21), and "Maybe" (21), indicating familiarity with fintech but concerns over transaction failures, cybersecurity, and internet dependency. Despite fintech growth, infrastructure and security remain key challenges. The 26-45 age group leans toward digital adoption, with more "Yes" (9) responses due to exposure to UPI, mobile wallets, and online banking. However, some still rely on cash, especially in semi-urban and rural areas.

The 46+ age group show significant resistance to a cashless economy. The 46-65 group has more "No" (5) and "Maybe" (7) responses, reflecting digital literacy and fraud concerns. The 65+ group are the most reluctant, with one "No" and no "Yes," showing digital exclusion challenges. While fintech adoption is rising, India is not yet ready for a fully cashless economy. Bridging the gap requires enhancing digital literacy, improving security, and expanding fintech accessibility, especially for older and rural populations. Government and fintech players must focus on building trust and inclusivity to enable a smooth transition.

4.5.2 Distinction of No. of UPI transactions made in a day according to the age groups comprising the sample.

Table 17: Representing the no. of UPI transactions made in a day by respondents according to age groups

AGE	None	1-5	5-10	>10
<18	1	3	0	1
18-25	1	41	17	3
26-45	2	12	2	3
46-65	2	5	4	2
>65	1	0	0	0

The 18-25 age group shows the highest engagement with UPI transactions, with 41 individuals making 1-5 transactions per day, 17 making 5-10, and 3 making more than 10. This reflects their strong preference for digital payments, online shopping, and app-based transactions, aligning with fintech trends in India. Their frequent use of UPI indicates a shift towards a cashless economy among younger generations.

The 26-45 age group exhibits moderate UPI usage, with 12 people making 1-5 transactions daily, 2 making 5-10, and 3 exceeding 10 transactions. This suggests that while digital payments are widely accepted for work, business, and personal expenses, some individuals still rely on traditional cash transactions, especially in semi-urban and rural areas where digital penetration is lower.

Among the 46-65 age group, adoption declines further. Only 5 individuals make 1-5 transactions daily, while 4 make 5-10, and 2 exceed 10. This group shows hesitation toward digital transactions, likely due to concerns about security, fraud risks, and ease of use. However, their engagement indicates a gradual shift towards fintech adoption, particularly in urban settings.

The 65+ age group demonstrates minimal UPI usage, with just 1 individual making 1-5 transactions per day, and none exceeding this range. This highlights significant digital exclusion challenges, as older individuals often prefer traditional banking methods and cash transactions due to lack of familiarity with fintech platforms.

The data reveals a generational gap in UPI adoption, with younger groups (18-25 and 26-45) leading the shift towards digital payments, while older demographics, especially the 65+ age group, show minimal engagement. While fintech adoption is strong among young adults due to convenience and familiarity, concerns over security, digital literacy, and accessibility hinder widespread acceptance among older populations.

5 CONCLUSION

5.1 FINTECH INTEGRATION

Fig.1 shows UPI as the most popular choice of payment, but Cash follows behind as the second most popular choice.

Fig.2 indicates convenience, speed, and security as the primary appeal of cashless transactions. These can mostly be correlated with UPI as it formed a significant portion of the responses as seen in Fig.1.

Aspects like environmental benefits and digital innovation are secondary concerns for most, which can help policymakers tailor nationwide strategies to focus on the key motivators driving digital payment adoption.

Fig.3 shows that a small 6percent of respondents confidently indicated that they don't carry cash, reflecting a slow but apparent growth in reliance on cashless transactions.

Fig.4 solidifies the widespread adoption of UPI payment methods as 93percent of respondents make UPI transactions daily, showing robust integration.

5.2 CASH DEPENDENCY

Fig.1 represents around 80 responses in the favour of Cash as a mode of payment still being used among the respondents. This clearly shows that the sample is one representative of the true state of Fintech adoption; not everyone has shifted to cashless payments completely.

Despite the supposed widespread adoption of cashless payment methods, Fig.3 shows that 94percent of the respondents still carry cash with them. The response also shows that though carrying large amounts of cash is relatively uncommon, almost 30percent of the respondents carry at least ₹2,000 on average, likely due to great dependency.

Fig.4 shows an interesting 7percent of the sample not making any UPI transactions at all. This small percentage cannot be ignored as it shows that not everyone is on the path of being cashless; they are still strongly dependent on cash or other payment methods.

Fig.5 shows that only 37percent report full confidence in the reliability of the network available to them for digital transactions, with the remaining 63percent being split on such an opinion. This can be one of the major reasons as to why most of the respondents still prefer to carry cash with them (as seen in Fig.3), and thus points us to a great reason to why India is yet to become fully cashless.

The correlation analysis conducted between the reliability of internet connection available to respondents and how often do respondents carry cash reveal a weak negative correlation of -0.268. This indicates that as the reliability of the internet improves, respondents tend to carry less cash. This can be a crucial factor upon which improvements can be made to ensure a smooth transition to a fully cashless economy.

Fig.7 shows that around 53 percent of respondents would face problems or difficulties if cash were no longer available as an option to make payments. This shows that

more than half of the sample is not ready for a 100 percent cashless economy, and they will show resistance to a fully cashless economy.

The correlation analysis conducted between how likely respondents are to face problems if cash were no longer an option for transactions and how often respondents carry cash reveals a weak positive correlation of 0.281. This indicates that as respondents carry cash more frequently, they are slightly more likely to face problems if cash were no longer available as an option of payment. This is important to keep in mind if India were to be on a steady path of turning 100 percent cashless.

Fig.8 shows that respondents generally had a positive attitude in most of the dominantly cash-dependent scenarios. Neutral attitudes were recorded in only 3 scenarios, with no Negative attitudes being recorded for any scenario. This showed that even with the current robust Fintech integration levels as recorded in other sections of the survey, there exist many scenarios where cash transactions are either still preferred (such as Scenario 2) or cash is needed as a contingency (Scenario 7). This revelation is important to keep in mind if the country is to be pushed towards turning completely cashless.

5.3 FUTURE OF CASHLESS ECONOMY

Fig.9 suggests that while cashless payments are widely used, technical or security-related concerns persist, and while they are generally reliable, they are not free from disruptions.

Fig.9 and Fig.10 can be related. Fig.10 implies that while 59 percent of respondents may temporarily switch to cash or another alternative after experiencing issues, they eventually regain confidence in digital payments. For 34 percent of the respondents, occasional failures or fraud risks did not significantly deter them from using digital payments, showing strong integration of digital payments in their lives, which is almost irreplaceable.

The nearly even split in Fig.11 suggests that while many recognise India's advancements in digital payments, concerns remain about feasibility and accessibility, and so a 100 percent cashless economy cannot be declared feasible with certainty.

Fig.12 reveals unreliable internet connectivity as the biggest barrier in India’s transition to a 100 percent cashless economy. Other significant barriers include low digital literacy among rural communities and older generations, trust issues regarding online fraud and cybersecurity risks, and the complexity and inadequacy of redressal mechanisms.

Fig. 13 shows that respondents perceive reliable internet connectivity as most essential for seamless transactions, and therefore a truly cashless economy. Other significant improvements suggested are strengthening cybersecurity measures, a faster and more transparent grievance system, and offline payment options for areas with weak connectivity.

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