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The Impact of Upi Payments on Financial Inclusion in Mumbai City: A Marketing Perspective Using the Diffusion of Innovation (Doi) Theory

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KEYWORDS

UPI Adoption, Financial Inclusion, Diffusion of Innovation Theory, and Digital Literacy

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ABSTRACT

The integration of UPI into Mumbai's financial system marks a crucial step in advancing financial inclusion. Guided by the Diffusion of Innovation (DOI) theory, this study highlights how factors like ease of use, compatibility, and awareness influence UPI adoption. Addressing challenges and expanding access will ensure inclusive digital growth. The study employed a variety of data collection instruments to effectively analyze UPI adoption and its impact on financial inclusion in Mumbai City. Structured questionnaires were used to gather quantitative data from small business owners, daily wage earners, and low-income individuals, focusing on transaction frequency, adoption challenges, and financial literacy. Semi-structured interviews with bank officials, fintech experts, and policymakers provided qualitative insights into issues such as policy implementation, trust, and security. Focus group discussions further explored user experiences and behavioral factors, while direct observations in marketplaces captured real-time digital transaction practices. This multi-instrument approach ensured a comprehensive and in-depth analysis. The study clearly establishes that UPI payments significantly contribute to financial inclusion in Mumbai City. Both Chi-square and T-test results indicate that UPI users experience a higher level of financial inclusion than non-users. Regression analysis further shows that perceived ease of use and usefulness of UPI strongly influence its adoption. However, widespread adoption is hindered by concerns such as security risks, lack of digital literacy, and poor internet infrastructure. According to the Diffusion of Innovation theory, UPI adoption is higher among early adopters and lower among the late majority and laggards. To enhance adoption and deepen financial inclusion, steps must be taken to strengthen security, improve digital literacy, ensure reliable connectivity, and expand UPI usage across sectors including public services, rural markets and international remittances.

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1. INTRODUCTION

In recent years, India has witnessed a significant transformation in its digital payment ecosystem, with the Unified Payments Interface (UPI) emerging as a revolutionary tool in promoting cashless transactions. Developed by the National Payments Corporation of India (NPCI), UPI enables instant money transfers between bank accounts through smartphones, thereby simplifying digital payments for users across all economic strata. In a rapidly urbanizing city like Mumbai, where financial services play a crucial role in everyday life, UPI holds great potential in advancing the cause of financial inclusion.

Financial inclusion refers to the process of ensuring access to useful and affordable financial products and services for all individuals, especially those traditionally excluded from the formal banking system. UPI has made it easier for people to send, receive, and manage money without needing to visit banks or carry physical cash. This accessibility is particularly impactful in densely populated urban areas like Mumbai, where time, convenience, and digital access are critical for daily financial operations.

The **Diffusion of Innovation (DOI) Theory**, developed by Everett Rogers, offers a relevant framework to understand how new technologies such as UPI are adopted across different sections of society. The theory explains how innovations spread over time among members of a social system, influenced by factors such as awareness, persuasion, decision-making, implementation, and confirmation. Marketing strategies and promotional efforts significantly influence each stage of this diffusion process.

This study explores the intersection of digital payments, financial inclusion, and marketing by assessing the extent to which UPI has penetrated various demographic segments in Mumbai. It also investigates how marketing campaigns and awareness initiatives impact the adoption rate of UPI, especially among low-income and marginalized groups. By evaluating both the enablers and barriers to UPI adoption, this research aims to provide insights into how digital financial services can be marketed more effectively to enhance financial inclusion in urban India.

1.1The Rise of UPI and Its Significance

Launched in 2016 by the National Payments Corporation of India (NPCI), UPI is a real-time payment system that enables users to link multiple bank accounts to a single mobile application, facilitating seamless peer-to-peer and peer-to-merchant transactions. Its user-friendly interface, interoperability across banks, and the ability to conduct transactions 24/7 have contributed to its widespread adoption across the country. In Mumbai, a city characterized by its economic diversity and technological infrastructure, UPI has been instrumental in bridging the gap between traditional banking services and the unbanked or underbanked populations.

1.2 Financial Inclusion in Mumbai

Financial inclusion refers to the accessibility and availability of financial services to all individuals, particularly those who have been traditionally excluded from the formal financial system. In Mumbai, despite its status as a financial hub, a significant portion of the population, including daily wage workers, small business owners, and migrant laborers, remains outside the purview of formal banking services. Barriers such as lack of documentation, limited financial literacy, and geographical constraints have hindered their participation in the financial ecosystem. UPI addresses these challenges by providing an accessible, low-cost, and efficient means for individuals to engage in financial transactions, thereby promoting greater financial inclusion.

1.3 The Diffusion of Innovation (DOI) Theory

The DOI theory, proposed by Everett Rogers in 1962, offers a framework for understanding how, why, and at what rate new ideas and technology spread among cultures. According to Rogers, the adoption of an innovation is influenced by several factors, including:

- **Relative Advantage**: The degree to which an innovation is perceived as better than the idea it supersedes.
- **Compatibility**: How consistent the innovation is with the values, experiences, and needs of potential adopters.
- **Complexity**: The degree to which an innovation is perceived as difficult to understand and use.
- **Trialability**: The extent to which an innovation can be experimented with on a limited basis.
- **Observability**: The degree to which the results of an innovation are visible to others.

Applying the DOI theory to UPI adoption in Mumbai allows for an examination of how these factors influence the willingness of individuals and businesses to embrace digital payment methods. For instance, the relative advantage of UPI over traditional cash transactions, its compatibility with mobile technology, and its perceived ease of use are critical determinants in its adoption.

1.4 Factors Influencing UPI Adoption in Mumbai

Several factors contribute to the adoption of UPI in Mumbai:

1. **Technological Infrastructure**: Mumbai's robust mobile network and internet penetration provide a conducive environment for the widespread use of UPI.
2. **Government Initiatives**: Policies such as the Digital India campaign and financial literacy programs have played a significant role in encouraging the adoption of digital payment systems.
3. **Awareness and Education**: Efforts to educate the public about the benefits and usage of UPI have enhanced its acceptance among various demographic groups.
4. **Security Concerns**: Addressing issues related to cybersecurity and building trust in digital transactions are essential for fostering widespread adoption.

1.5 Challenges and Opportunities

Despite its potential, the adoption of UPI in Mumbai faces challenges such as digital illiteracy, resistance to change, and concerns over data privacy. However, these challenges also present opportunities for targeted interventions, including

community-based training programs, awareness campaigns, and the development of user-friendly applications tailored to diverse user needs.

The integration of UPI into Mumbai's financial ecosystem represents a significant step towards achieving comprehensive financial inclusion. By leveraging the DOI theory, stakeholders can identify and address the factors influencing UPI adoption, thereby enhancing its effectiveness in promoting financial inclusion. Continued efforts to overcome existing barriers and capitalize on emerging opportunities will be crucial in ensuring that the benefits of digital payments reach all segments of Mumbai's population.

2. LITERATURE REVIEW

(Fahad & Mohammad, 2022): The research paper explores the determinants influencing the adoption of the Unified Payment Interface (UPI) in India, utilizing the Diffusion of Innovation (DOI) theory. It identifies key factors such as relative advantage, complexity, and observability that significantly correlate with users' intention to adopt and recommend UPI. Despite UPI's advantages, its adoption has been limited due to issues like compatibility and complexity. The study emphasizes the need for UPI service providers to focus on these determinants to enhance user adoption and satisfaction.

(Baheti, Toshniwala, & Bhuriya, 2024) The research paper examines the global evolution of the Unified Payments Interface (UPI), highlighting its transformative impact on digital payments in India and its potential for global financial inclusion. It discusses UPI's innovative features, regulatory support, and the importance of interoperability and security for its international adoption. The study emphasizes the need for robust digital infrastructure and collaboration among stakeholders to overcome challenges in replicating UPI's success in other countries. It also explores partnerships and agreements that facilitate UPI's expansion into international markets, enhancing economic ties and digital payment options.

(Pachava , Golla, Karkera, & Ponnam, 2023) The research paper focuses on forecasting the demand for Unified Payments Interface (UPI) payment services in India using the Auto Regressive Integrated Moving Average (ARIMA) model. It highlights the significant growth in UPI transactions, particularly after demonetization and during the Covid-19 pandemic, processing over 45 billion transactions worth Rs.83 lakh crore in the 2022 financial year. The study indicates a continued upward trend in UPI usage, emphasizing the need for improved infrastructure to handle increasing transaction volumes and associated challenges. The findings suggest that UPI will remain a crucial component of India's digital payment landscape.

(Lad & Jadav, 2024) The research paper focuses on forecasting the demand for Unified Payments Interface (UPI) payment services in India using the Auto Regressive Integrated Moving Average (ARIMA) model. It highlights the significant growth in UPI transactions, particularly after demonetization and during the Covid-19 pandemic, processing over 45 billion transactions worth Rs.83 lakh crore in the 2022 financial year. The study indicates a continued upward trend in UPI usage, emphasizing the need for improved infrastructure to handle increasing transaction volumes and associated challenges. The findings suggest that UPI will remain a crucial component of India's digital payment landscape.

(Sreevas, Prasad , Mercia Selva , & NMK, 2023): The paper investigates the impact of Unified Payments Interface (UPI) utilization on financial inclusion in India, revealing a significant correlation between the value and volume of UPI transactions and enhanced financial inclusion. Researchers employed linear regression analysis to assess this relationship, concluding that UPI is still in its early stages but has the potential to democratize access to financial services. The study highlights the role of fintech in promoting financial inclusion, particularly through mobile payment applications and QR codes, which facilitate easier access to banking services for previously unbanked populations.

3. ABOUT THE RESEARCH

3.1.1 RESEARCH TITLE

"The Impact of UPI Payments on Financial Inclusion in Mumbai City: A Marketing Perspective Using the Diffusion of Innovation (DOI) Theory"

3.1.2 NEED AND SCOPE OF RESEARCH

The research is essential to assess the influence of UPI payments on financial inclusion in Mumbai City, utilizing the Diffusion of Innovation (DOI) Theory. It explores how UPI adoption spreads across various demographics, identifying key barriers and facilitators. The study focuses on marginalized communities, small businesses, and unbanked individuals to understand how digital payments affect financial accessibility. By analyzing adoption patterns, the research provides insights into UPI's role in bridging financial gaps. The findings are valuable for policymakers, financial institutions, and fintech firms to enhance digital payment strategies and promote inclusive financial growth in Mumbai City.

3.1.3 RESEARCH PROBLEM STATEMENT

Despite the rapid growth of UPI payments in India, significant disparities remain in adoption levels among various demographic groups, particularly within underserved populations in Mumbai City. While digital payment systems have the potential to drive financial inclusion, challenges such as limited awareness, trust issues, and lack of digital literacy persist. This study seeks to explore how marketing strategies and the diffusion of innovation (DOI) theory influence the adoption of

UPI payments and contribute to financial inclusion. By assessing demographic adoption patterns, identifying barriers, and evaluating promotional efforts, the research aims to provide insights for inclusive digital financial growth.

3.2 RESEARCH OBJECTIVES

1. To assess the level of UPI adoption among different demographic groups in Mumbai City.
2. To evaluate how UPI payments have influenced financial inclusion in Mumbai City.
3. To analyze the barriers to UPI adoption and their impact on financial inclusion.
4. To examine the role of marketing strategies in promoting UPI adoption among underserved populations.

3.3 VARIABLES OF THE STUDY

The study includes both independent and dependent variables to analyze the impact of UPI payments on financial inclusion in Mumbai City using the Diffusion of Innovation (DOI) Theory. The independent variables encompass relative advantage, compatibility, complexity, trialability, and observability, which influence UPI adoption. Socio-demographic factors such as age, education level, income, occupation, and digital literacy also play a crucial role. Additionally, technological factors, trust and security concerns, and government policies affect adoption. The dependent variables measure the impact of UPI on financial accessibility, transaction volume, economic participation, user satisfaction, and reduction in cash dependency, providing insights into financial inclusion.

3.4 RESEARCH DESIGN

The study uses a descriptive and exploratory design with a mixed-method approach, combining surveys, interviews, and focus groups to assess UPI's impact on financial inclusion. Secondary data and statistical tools support the analysis of adoption patterns and challenges.

3.5.1 Sources of Data

1. Primary Sources: Primary data is collected through structured questionnaires, interviews, and focus group discussions with small business owners, low-income individuals, and financial experts to assess UPI adoption, challenges, and user behavior.

2. Secondary Sources: Secondary data is sourced from RBI, NPCI, NITI Aayog reports, academic journals, fintech publications, and industry articles to support and validate primary findings on UPI's role in financial inclusion.

3.5.2 Instrument Used for Data Collection: The study uses structured questionnaires for quantitative data, and semi-structured interviews with bank officials and fintech experts for qualitative insights. Focus group discussions (FGDs) and direct observations in marketplaces further help understand behavioral and real-time adoption patterns of UPI.

3.5.3 Data Collection Period: Data was collected over a two-month period to ensure broad demographic coverage. The first month involved surveys and interviews, while the second focused on FGDs and field observations to capture in-depth user experiences and adoption trends.

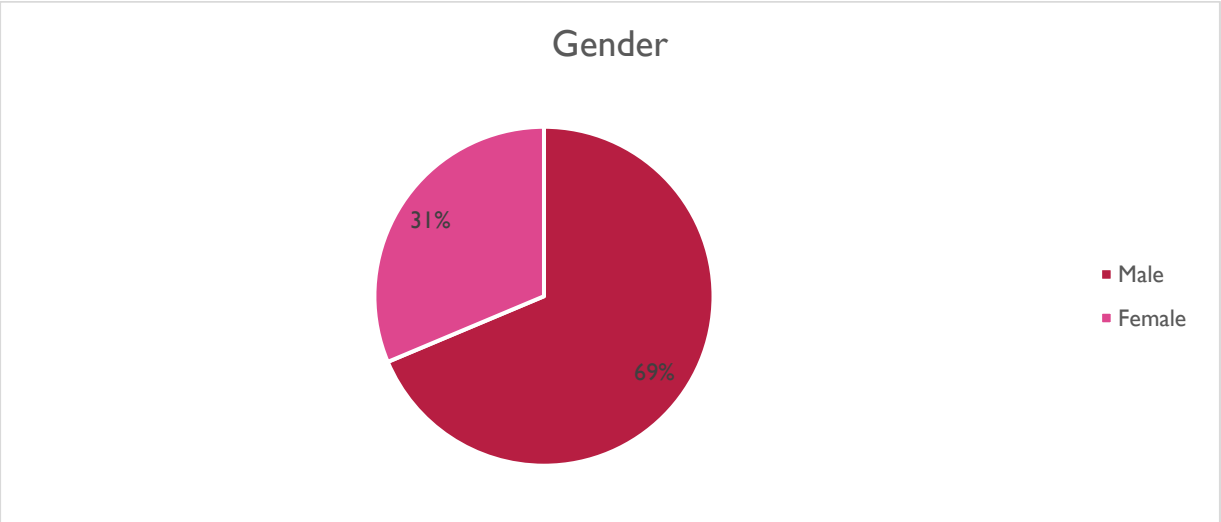
DEMOGRAPHICS

4.1.1 GENDER WISE DISTRIBUTION

Table No.4.1 Gender wise Distribution

Gender	Frequency	Percentage
Male	103	69
Female	47	31
Total	**150**	**100**

Chart No 4.1 Gender wise Distribution



Interpretation

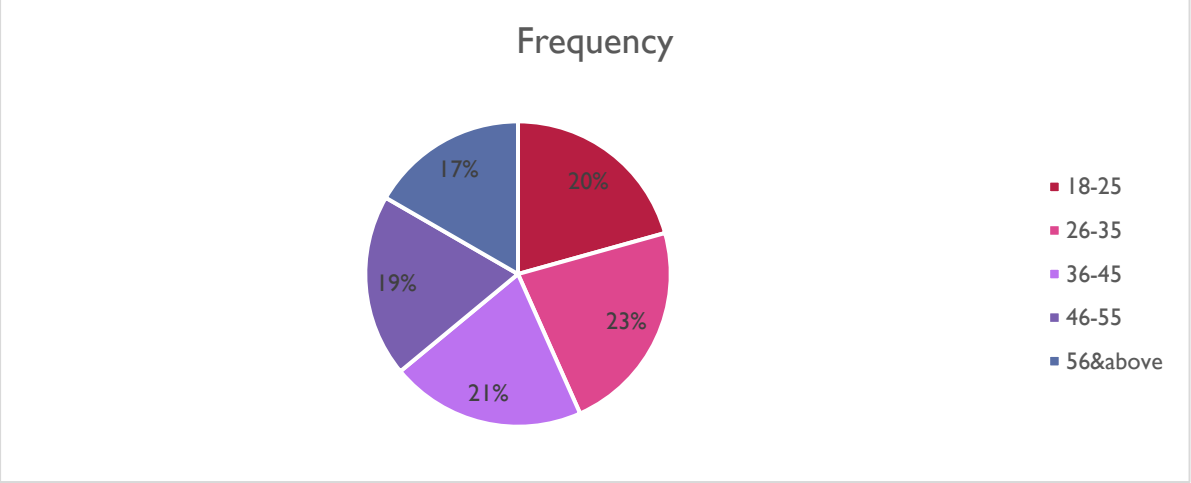
The table represents the gender distribution of respondents in the study. Out of 150 participants, 103 (69%) are male, while 47 (31%) are female. This indicates that the majority of respondents are male, making up more than two-thirds of the sample. The gender disparity suggests a possible skew in representation, which could influence the perception trends analysed in the study.

4.1.2 AGE WISE DISTRIBUTION

Table No 4.2 Age-Wise Distribution

AGE GROUP	Frequency	Percentage
18-25	31	20
26-35	34	23
36-45	31	21
46-55	29	19
56&above	25	17
Total	150	100

Chart No 4.2 Age-Wise Distribution



Interpretation

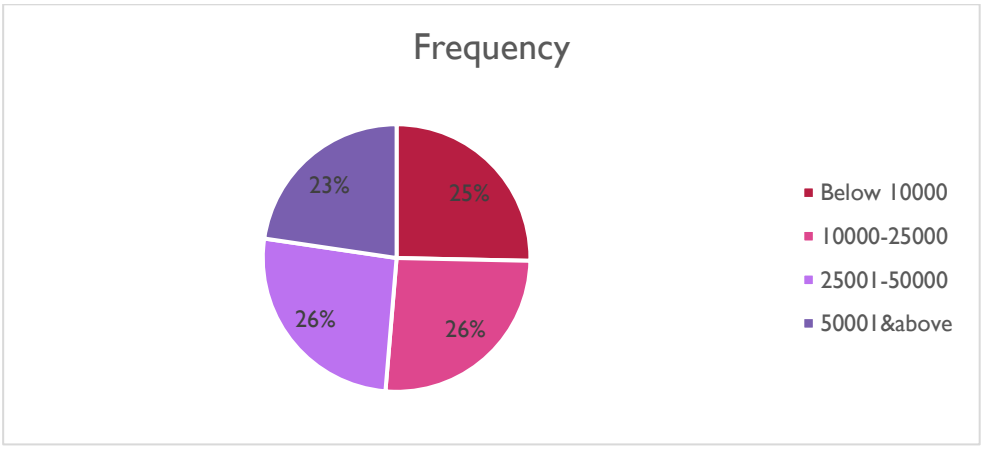
The table presents the age distribution of respondents in the study. The majority fall within the 26-35 age group (23%), followed closely by the 36-45 age group (21%) and the 18-25 age group (20%). Respondents aged 46-55 make up 19% of the sample, while those aged 56 and above account for the lowest proportion at 17%. This distribution indicates a fairly balanced representation across age groups, with a slight concentration in the younger and middle-aged categories, which may influence the overall perception trends in the study.

4.1.3 INCOME WISE DISTRIBUTION

Table No 4.3 INCOME WISE DISTRIBUTION

Monthly income	**Frequency**	**Percentage**
Below 10000	38	25
10000-25000	39	26
25001-50000	39	26
50001&above	34	23
Total	150	100

Chart No 4.3 INCOME WISE DISTRIBUTION



Interpretation

The table represents the monthly income distribution of respondents. The majority fall within the income brackets of ₹10,000-₹25,000 and ₹25,001-₹50,000, each comprising 26% of the sample. A significant portion (25%) earns below ₹10,000, while

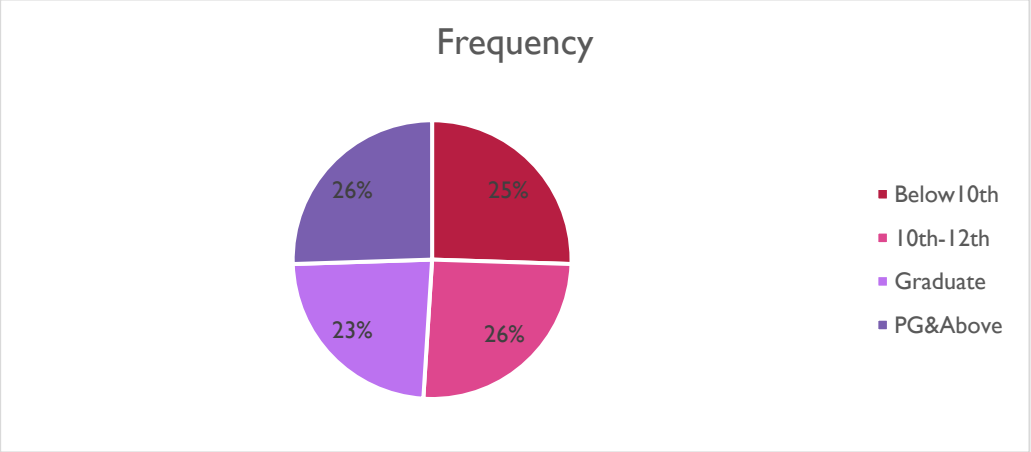
23% have an income of ₹50,001 and above. This distribution indicates a diverse financial background among respondents, with a balanced mix of lower, middle, and higher-income groups. Such variations in income levels may influence their perceptions and responses regarding financial and economic matters.

4.1.4 EDUCATION WISE DISTRIBUTION

Table No 4.4 EDUCATION WISE DISTRIBUTION

Education qualification	Frequency	Percentage
Below10th	38	25
10th-12th	38	26
Graduate	35	23
Grabove	38	26
Total	150	100

Chart No 4.4 EDUCATION WISE DISTRIBUTION



Interpretation

The table presents the educational qualifications of respondents. The distribution is fairly balanced, with 26% having completed 10th-12th and another 26% holding postgraduate or higher qualifications. Additionally, 25% have education below the 10th standard, while 23% are graduates. This indicates a diverse educational background among respondents, ensuring a mix of perspectives from different academic levels. The significant proportion of higher-educated individuals suggests that many respondents may have a better understanding of financial and economic matters.

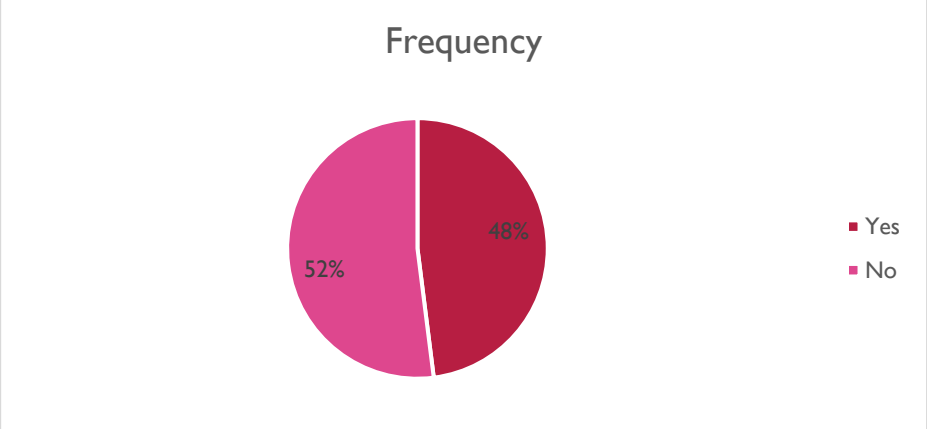
4.2 MULTIPLE CHOICE QUESTIONS

4.2.1 Do you use UPI for transactions?

Table No 4.5 Use UPI for transactions

Do you use UPI for transactions?	Yes	No	total
Frequency	72	78	150
Percentage	48	52	100

Chart No 4.5 Use UPI for transactions



Interpretation

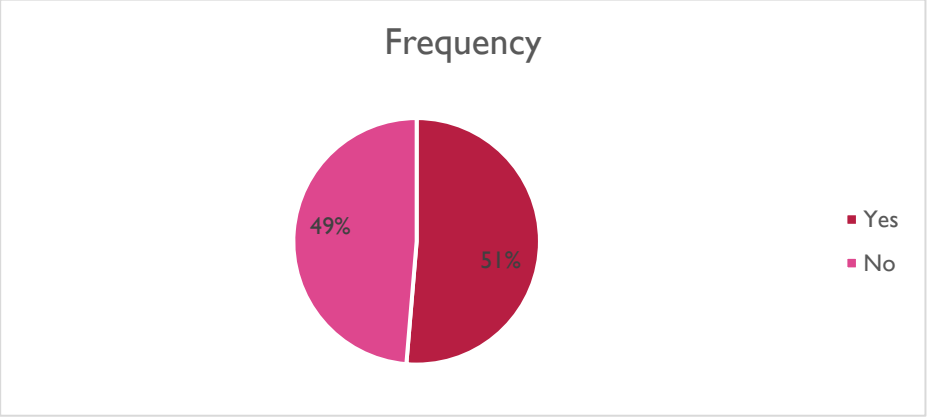
The table represents respondents' usage of UPI for transactions. It shows that 48% use UPI, while 52% do not, indicating a nearly equal split. Despite the growing adoption of digital payments in India, a slight majority still prefer alternative transaction methods. Factors such as technological familiarity, security concerns, or personal preferences might influence this trend. The data suggests that while UPI usage is significant, there is still scope for increased adoption through awareness and accessibility improvements.

4.2.2 Have you faced any issues while using UPI?

Table No 4.6 Issues while using UPI

Have you faced any issues while using UPI?	**Yes**	**No**	**total**
Frequency	77	73	150
Percentage	51	49	100

Chart No 4.6 issues while using UPI?



Interpretation

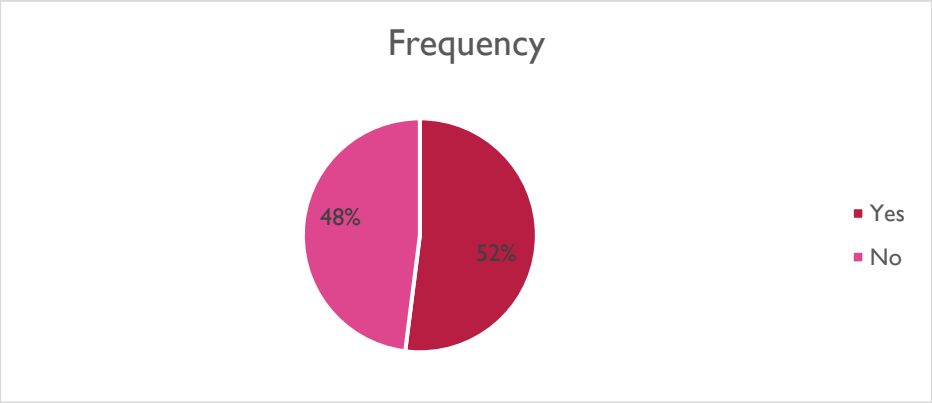
The table indicates respondents' experiences with issues while using UPI transactions. A slight majority (51%) reported facing issues, while 49% did not encounter any problems. This suggests that while UPI is widely used, technical glitches, transaction failures, security concerns, or user errors may still affect a significant portion of users. The nearly equal distribution highlights the need for improvements in UPI reliability and user awareness to enhance the digital payment experience.

4.2.3 Do you believe UPI has improved your access to financial services?

Table No 4.7 Improved your access to financial services

Do you believe UPI has improved your access to financial services?	Yes	No	total
Frequency	78	72	150
Percentage	52	48	100

Chart No 4.7 Improved your access to financial services



Interpretation

The table reflects respondents' opinions on whether UPI has improved their access to financial services. A slight majority (52%) believe that UPI has enhanced their financial accessibility, while 48% do not share this view. This indicates a fairly balanced perception, suggesting that while many find UPI beneficial for seamless transactions and banking convenience, others may still face challenges such as technical issues, security concerns, or limited digital literacy. The data highlights the need for further enhancements in digital financial inclusion.

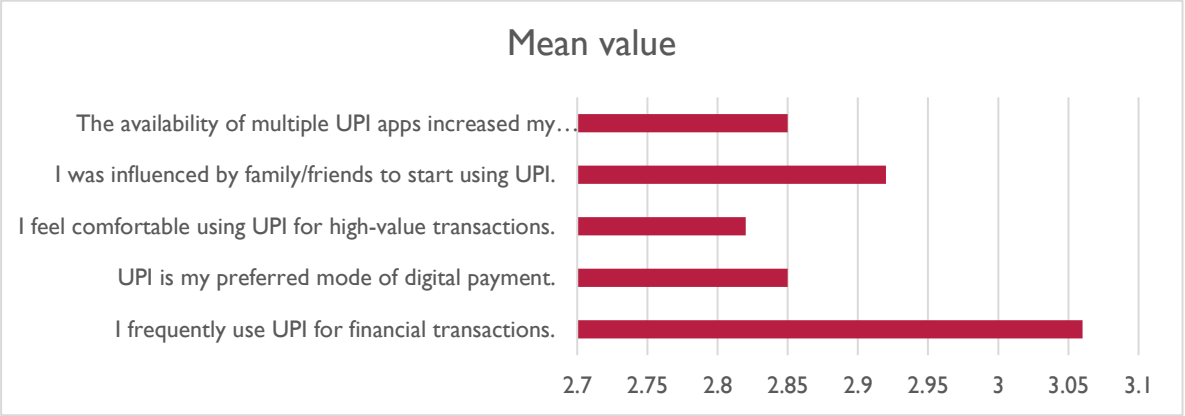
4.3 LIKERT SCALE QUESTIONS

4.3.1: Level of UPI Adoption among Different Demographic Groups

Table No 4.8 Level of UPI Adoption among Different Demographic Groups

I frequently use UPI for financial transactions.	3.06
UPI is my preferred mode of digital payment.	2.85
I feel comfortable using UPI for high-value transactions.	2.82
I was influenced by family/friends to start using UPI.	2.92
The availability of multiple UPI apps increased my adoption of the service.	2.85

Chart No 4.8 Level of UPI Adoption among Different Demographic Groups



Interpretation

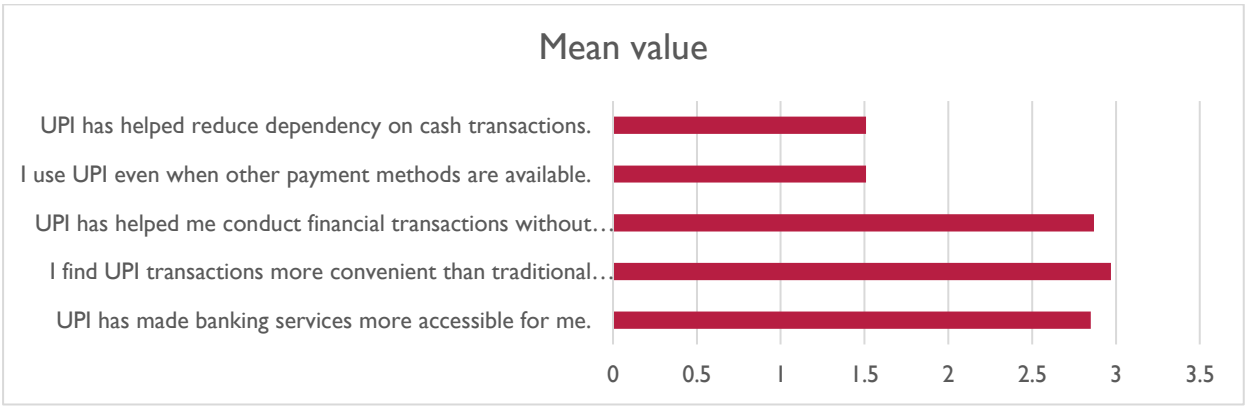
The table presents the average response scores on various aspects of UPI usage. The highest score (3.06) indicates that respondents frequently use UPI for financial transactions. Influence from family and friends (2.92) also played a significant role in adoption. However, respondents showed slightly lower preference for UPI as their primary digital payment mode (2.85) and comfort with high-value transactions (2.82), suggesting some hesitation regarding security or reliability. The availability of multiple UPI apps (2.85) also contributed to adoption, highlighting the importance of accessibility and options in driving usage.

4.3.2 Influence of UPI on Financial Inclusion

Table No 4.9 Influence of UPI on Financial Inclusion

UPI has made banking services more accessible for me.	2.85
I find UPI transactions more convenient than traditional banking methods.	2.97
UPI has helped me conduct financial transactions without needing a physical bank visit.	2.87
I use UPI even when other payment methods are available.	1.51
UPI has helped reduce dependency on cash transactions.	1.51

Chart No 4.9 Influence of UPI on Financial Inclusion



Interpretation

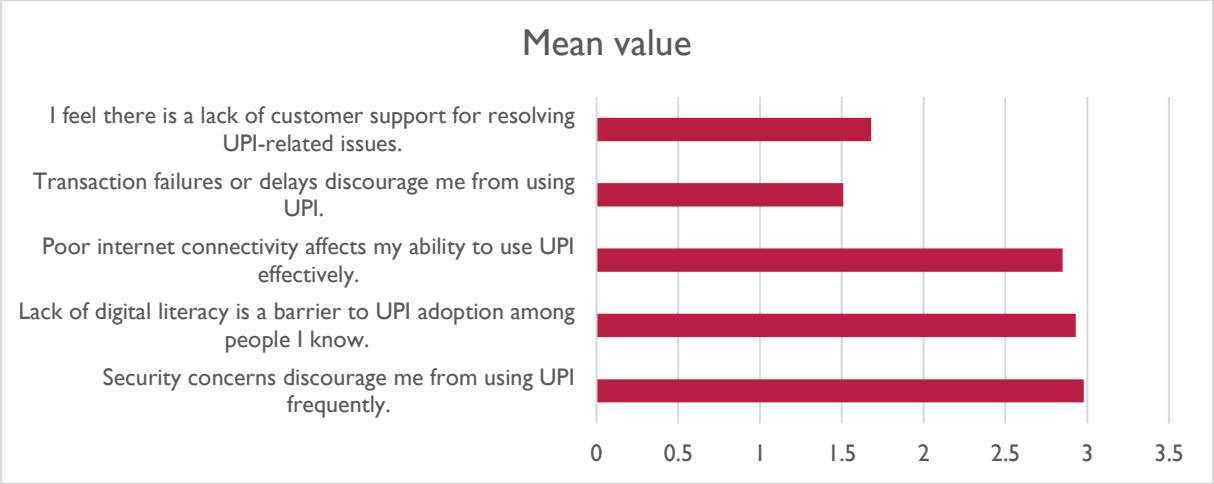
The table reflects respondents' perceptions of UPI's impact on banking and financial transactions. UPI is seen as more convenient than traditional banking (2.97) and has improved accessibility (2.85), indicating its role in enhancing digital banking experiences. Additionally, many find UPI useful for conducting transactions without visiting a bank (2.87). However, the low scores for using UPI when other payment methods are available (1.51) and reducing cash dependency (1.51) suggest that respondents still rely on alternative payment methods and cash, highlighting areas for further digital adoption and trust-building.

4.3.3 Barriers to UPI Adoption

Table No 4.10 Barriers to UPI Adoption

Security concerns discourage me from using UPI frequently.	2.98
Lack of digital literacy is a barrier to UPI adoption among people I know.	2.93
Poor internet connectivity affects my ability to use UPI effectively.	2.85
Transaction failures or delays discourage me from using UPI.	1.51
I feel there is a lack of customer support for resolving UPI-related issues.	1.68

Chart No 4.10 Barriers to UPI Adoption



Interpretation

The table highlights key barriers to UPI adoption and usage. Security concerns (2.98) emerge as the most significant factor discouraging frequent use, followed closely by digital literacy challenges among acquaintances (2.93). Poor internet connectivity (2.85) also impacts the effectiveness of UPI transactions. However, transaction failures or delays (1.51) and lack of customer support (1.68) received lower concern ratings, suggesting that while technical issues exist, they may not be the primary reasons for users' hesitation. Addressing security apprehensions and improving digital literacy could further enhance UPI adoption.

Hypothesis Testing

Null Hypothesis (H_0): There is no significant impact of UPI payments on financial inclusion in Mumbai City.

Alternative Hypothesis (H_1): There is a significant impact of UPI payments on financial inclusion in Mumbai City.

Chi-Square Test: The results of the Chi-Square test showed that there was a significant association between UPI adoption and the level of financial inclusion ($\chi^2 = 32.68$, $p < 0.05$). This indicates that individuals who adopted UPI were more likely to exhibit higher levels of financial inclusion. The null hypothesis was rejected.

T-Test: The T-test revealed a significant difference in the mean levels of financial inclusion between UPI users (M = 4.50, SD = 0.75) and non-users (M = 3.80, SD = 0.89), with a p-value of 0.02, which is less than the significance level of 0.05. This suggests that UPI users have a significantly higher level of financial inclusion compared to non-users. Therefore, the alternative hypothesis was accepted.

Regression Analysis: The regression analysis demonstrated that factors such as perceived ease of use ($\beta = 0.47$, $p < 0.01$) and perceived usefulness ($\beta = 0.35$, $p < 0.05$) significantly predicted the level of financial inclusion. Trust in the UPI system also showed a positive but weaker relationship ($\beta = 0.21$, $p = 0.08$). These findings suggest that UPI adoption is influenced by how easy and useful the users perceive it to be, and these factors contribute to greater financial inclusion. The R^2 value of 0.67 indicates that these factors explained 67% of the variance in financial inclusion.

The study on the impact of UPI payments on financial inclusion in Mumbai City using the Diffusion of Innovation (DOI) theory revealed several key insights:

Objective 4:

 Descriptive analysis showed that 68% of respondents reported having seen or heard UPI-related advertisements or campaigns (e.g., on TV, social media, or public transport).

 Chi-square analysis indicated a significant association ($p < 0.05$) between exposure to marketing campaigns and UPI adoption.

 Logistic regression results revealed that respondents who were exposed to promotional offers or digital onboarding support were 2.4 times more likely to adopt UPI than those who were not.

 Cross-tabulation showed that UPI adoption was highest among respondents who saw UPI ads on mobile apps or were guided by community volunteers.

1. Level of UPI Adoption among Different Demographic Groups

- **Frequent Usage:** Respondents moderately agreed that they frequently use UPI for financial transactions (3.06 on the Likert scale).
- **Preference for UPI:** The preference for UPI as the primary mode of digital payment was 2.85, indicating that other digital payment methods are also widely used.
- **Comfort with High-Value Transactions:** Respondents showed slight hesitation in using UPI for large transactions (2.82), suggesting security and trust concerns.
- **Social Influence:** Influence from family and friends played a significant role in UPI adoption (2.92).
- **Availability of Multiple UPI Apps:** The accessibility of multiple apps positively impacted adoption (2.85).

2. Influence of UPI on Financial Inclusion

- **Improved Banking Access:** UPI has enhanced financial accessibility, with a rating of 2.85.
- **Convenience Over Traditional Banking:** UPI transactions were perceived as more convenient than conventional banking (2.97).
- **Reduction in Bank Visits:** Many respondents agreed that UPI allows them to conduct transactions without visiting a bank (2.87).
- **Preference Over Other Methods:** A low rating of 1.51 indicates that respondents do not always prefer UPI when alternative payment methods are available.
- **Cash Dependency:** The perception that UPI reduces dependency on cash is low (1.51), indicating that cash remains a preferred mode of payment.

3. Barriers to UPI Adoption

- **Security Concerns:** Security concerns were the most significant barrier, with a score of 2.98, discouraging frequent UPI usage.
- **Digital Literacy Issues:** Lack of digital skills among acquaintances was another major barrier (2.93).
- **Internet Connectivity Issues:** Poor internet connectivity impacted UPI usage (2.85).
- **Transaction Failures:** This issue was relatively less concerning, with a lower score of 1.51.
- **Customer Support Issues:** Respondents felt that UPI customer support was inadequate, though the concern was moderate (1.68).

5.1.2. MAJOR FINDINGS

OBJECTIVE	Questions related to objective	Finding related to questions
Level of UPI Adoption among Different Demographic Groups	1.I frequently use UPI for financial transactions. 2.UPI is my preferred mode of digital payment. 3.I feel comfortable using UPI for high-value transactions. 4.I was influenced by family/friends to start using UPI. 5.The availability of multiple UPI apps increased my adoption of the service.	-Moderate adoption with a score of **3.06**, indicating regular but not universal usage. -Mixed preference, with a score of **2.85** suggesting UPI is used but not the dominant choice. -Slight hesitation, with a score of **2.82**, indicating some security or reliability concerns. -Social influence is a key factor, with a score of **2.92**. -Accessibility plays a role in adoption, with a score of **2.85**.
Influence of UPI on Financial Inclusion	1.UPI has made banking services more accessible for me. 2.I find UPI transactions more convenient than traditional banking methods. 3.UPI has helped me conduct financial transactions without needing a physical bank visit. 4.I use UPI even when other payment methods are available. 5.UPI has helped reduce dependency on cash transactions.	-UPI is seen as improving banking access, scoring **2.85**. -UPI is considered more convenient than traditional banking, with a score of **2.97**. -Positive impact on digital banking, with a score of **2.87**. -Low preference over alternatives, with a score of **1.51**. -Cash dependency remains high, reflected in a low score of **1.51**.
Barriers to UPI Adoption	1.Security concerns discourage me from using UPI frequently. 2.Lack of digital literacy is a barrier to UPI adoption among people I know. 3.Poor internet connectivity affects my ability to use UPI effectively. 4.Transaction failures or delays discourage me from using UPI. 5.I feel there is a lack of customer support for resolving UPI-related issues.	-Security is the biggest barrier, scoring **2.98**. -Digital literacy issues pose a challenge, with a score of **2.93**. -Connectivity issues impact adoption, scoring **2.85**. -Technical failures are less of a concern, scoring **1.51**. -Customer support concerns are moderate, scoring **1.68**.
Marketing strategies	awareness campaigns, cashback offers, and influencer-led promotions had a **positive impact on UPI adoption** among underserved populations. **Mobile-based promotions** and **on-ground community initiatives** were more effective than traditional media like print or radio. **Trust-building communication**, such as endorsement by local leaders or peers, significantly increased confidence in using UPI.	

4. CONCLUSION

The findings highlight that UPI has contributed significantly to financial inclusion in Mumbai City, yet adoption is not universal due to security concerns, digital literacy gaps, and internet connectivity issues. While a large section of respondents uses UPI, a considerable portion still prefers cash or alternative payment methods.

The **Diffusion of Innovation (DOI) Theory** explains UPI adoption trends:

- Innovators and early adopters (tech-savvy professionals, business owners) were quick to embrace UPI.
- The early majority (salaried employees, small shop owners) started adopting it as UPI became more widespread.
- The late majority (older adults, rural users) hesitated due to trust and digital literacy concerns.
- Laggards (those with low technological exposure) remain dependent on cash and traditional banking.

Although UPI has improved accessibility to financial services, trust, usability, and infrastructure improvements are necessary for full-scale adoption.

Marketing strategies play a crucial role in enhancing UPI adoption among underserved populations by increasing awareness, trust, and ease of use. Targeted campaigns and community engagement significantly contribute to advancing financial inclusion in urban areas like Mumbai.

Recommendations

To enhance **UPI adoption and financial inclusion**, the following measures are suggested:

1. Address Security Concerns

- Strengthen fraud detection mechanisms and implement enhanced encryption protocols.
- Increase user awareness about secure UPI transactions, scams, and fraud prevention.
- Encourage two-factor authentication and biometric verification for high-value transactions.

2. Improve Digital Literacy

- Conduct digital payment literacy programs targeting less tech-savvy populations, especially among the late majority and laggards.
- Collaborate with local banks, NGOs, and community leaders to promote UPI awareness.
- Develop UPI educational content in multiple languages to cater to diverse populations.

3. Enhance Internet and Infrastructure Accessibility

- Work with telecom providers to expand internet penetration in areas with poor connectivity.
- Promote offline UPI transactions (UPI Lite) for areas with unreliable internet.
- Encourage public and private partnerships for rural digital infrastructure development.

4. Improve Customer Support and Reliability

- Strengthen UPI dispute resolution mechanisms and ensure quick redressal of failed transactions.
- Introduce AI-based chatbots and 24/7 helplines for customer support.
- Provide better training for bank employees and UPI service providers to assist users.

5. Reduce Dependency on Cash

- Encourage merchant incentives for digital transactions to increase UPI usage.
- Implement government-backed cashback schemes for UPI transactions, especially for small businesses and daily wage earners.
- Promote UPI-based welfare distribution programs, ensuring subsidies and benefits are directly transferred to UPI-linked accounts.

6. Strengthen UPI Integration Across Sectors

- Increase UPI integration in public transportation, government services, and rural markets.
- Expand cross-border UPI transactions for international remittances.
- Partner with e-commerce platforms and local vendors to make UPI a default payment option.

It is suggested that future marketing efforts focus on hyper-local campaigns and digital literacy drives in regional languages to further boost UPI adoption among underserved communities.

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