

UPI as A Catalyst for Financial Inclusion: Unpacking the Impact Beyond Adoption – Access, Usage Nuances, Welfare Effects, and Persistent Barriers in Underserved Segments

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Abstract

Examining UPI's impact on access, usage patterns, economic well-being, and persistent impediments, this study seeks to advance financial inclusion among India's underprivileged groups. The links between UPI access, usage frequency, digital literacy, and financial inclusion outcomes were assessed using structural equation modelling. The data was evaluated using a quantitative cross-sectional survey that included 384 respondents from rural and low-income communities. A substantial correlation between regular UPI use and enhanced economic well-being (standardized estimate = 0.744, $p < 0.001$) and a notable beneficial impact of UPI access on financial inclusion (standardized estimate = 0.753, $p < 0.001$) are shown by the results. Although digital literacy and security though they didn't directly affect UPI adoption too much, concerns are still crucial contextual hurdles to consider. According to these results, UPI can help bring about digital equality by decreasing reliance on cash, increasing financial empowerment, and bolstering long-term economic growth. In order to achieve substantial acceptance of digital payment systems, the report stresses the need of focused governmental measures that include digital education, improved security infrastructure, and endeavours to overcome socio-psychological obstacles. Contributing to efforts for encouraging equitable financial growth in emerging nations and addressing technical access barriers, this research offers empirical information on the multifaceted consequences of UPI beyond mere adoption.

Keywords: Unified Payments Interface (UPI), Financial Inclusion, Digital Payment Systems, Economic Well-being, Digital Literacy, Structural Equation Modeling (SEM).

Introduction

Ensuring that everyone, particularly those with lower earnings and no bank account, has access to financial inclusion, possess equal access to financial services, including banking. For a fair price, "financial

inclusion ensures free access to, and use of, appropriate financial services for all people and businesses," BIS stated. Financial inclusion is essential so that individuals and small companies may participate in an economy's cycle. For the simple reason that it authorizes their usage of financial services and payment systems. Increased savings, investment, and consumption as a result of this involvement fuel economic activity and expansion [1].

Financial inclusion continues to be a major goal for politicians, regulators, and development organizations throughout the globe [2]; [3]; [4]. The rapid adoption of smartphones and their integration into daily life has accelerated this agenda, opening vast opportunities for digital financial innovations [5]. Payment systems now have tremendous room to expand because to this technical development [6]. Consumers' day-to-day financial transactions are made more easier with digital payment methods and applications [7]. By enabling individuals to better manage risks and withstand financial shocks, it also improves economic resilience. All things considered, more financial inclusion results in a more vibrant, just, and dynamic economy that fosters sustainable growth and lowers poverty.

Due to fast technology adoption and robust government backing, India is experiencing a significant digital transformation, especially in its financial sector. This shift became more pronounced post-2016 demonetization, which created a cash shortage and drove individuals and businesses toward digital payment methods [8]. In the time after, digital financial services exploded in popularity and development. With the advent of digital platforms, traditional banking paperwork such as demand drafts and pay-in-slips is rendered obsolete. All financial services will soon be accessible online, according to this implication. Among the many financial services offered by digital banks include mobile wallets such as Paytm, Google Pay, Phone Pay, and BHIM Unified Payments Interface (UPI), as well as digital payment gateways and digital lending platforms [9].

The Unified Payments Interface, which was introduced by the National Payments Corporation of India, was a

revolutionary development among these advances. Users are able to link several bank accounts and engage in immediate peer-to-peer transactions via UPI [10]. In 2016, the Unified Payments Interface (UPI) was introduced in India with the goal of offering a simple and efficient means for all citizens to digitalize their payment processes [11],[12]. Open API is the platform that UPI is built upon. Because to its layout, UPI is able to perform three primary tasks: First, it can be accessed through a mobile app. Second, it can be combined with an AADHAR number. Third, it doesn't need an internet connection. And lastly, it is very easy to use [13]. Fintech companies may readily interact with it and offer value-added services; it has also opened up enormous possibilities for innovation [14],[15]. Because UPI encourages transparency, it has decreased dependency on cash and increased economic development and makes cross-border transactions easier. In order to promote financial inclusion, UPI is crucial, and there is a significant correlation between the two.

UPI has emerged as a potent tool for expanding the availability of financial services in India by offering a straightforward, safe, and easily accessible digital payment platform [16]; [17]. One of the key benefits of UPI is that it allows for easy and fast transactions that don't need going to a traditional bank branch. This helps underserved populations get the financial services they need. For people without easy access to banking or other financial institutions, this convenience is a huge boon to their ability to participate in the formal economy. Among the financial services are bill payment, money transfers, and online purchasing that may be consolidated using UPI. People are better able to manage their money, save more, and become more financially literate as a result of this integration [1].

UPI has been extensively promoted by the Indian government as it is a vital tool for financial inclusion. Everyone who did not previously have access to bank accounts was required to open one of these basic accounts as part of UPI's effort to promote financial inclusion. The UPI app was linked to each of these accounts [18]. Although UPI has been widely used and is a focus of policy,

less is known about its actual effects on financial inclusion and welfare outcomes, particularly in marginalized and rural areas. Government officials and lawmakers would do well to be apprised of UPI's real initiatives aimed at fostering economic growth.

When it comes to UPI, the government might take two different approaches at the policy level. To start, UPI may be utilized as a method to bolster the digitization of payment services and other financial services. Two, UPI might be a top priority for the government as it works to expand financial services accessibility and encourage economic growth. However, before delving further into any topic, the government must understand how UPI affects people's economic progress and financial inclusion. Research on how UPI has affected financial inclusion in India is lacking. The multi-use nature of UPI is an invention that caters to the needs of the common people in India. Existing literature primarily explores UPI's technological design or transactional efficiency (e.g., Open-API frameworks) rather than its socio-economic implications [19],[20],[21].

By concentrating on the socioeconomic traits, our research fills this gap of individuals—particularly in rural areas—that influence UPI adoption, access, and sustained usage. By unpacking dimensions beyond adoption, including welfare effects and persistent barriers, this research provides localized insights that can inform targeted financial inclusion strategies. The novelty lies in integrating access, usage nuances, and welfare outcomes into a unified framework, allowing for a more comprehensive understanding of UPI's function as a driving force for inclusive digital finance.

The following are the objectives of the study:

- Analyze how underprivileged communities' access to UPIs affects their level of financial inclusion.
- To determine how often UPI users are financially well-off and what kind of link exists between the two.
- To assess how barriers to UPI adoption relate to levels

of digital literacy and perceived security issues.

Section 2 lays out the research need and does a comprehensive literature review, which are additional subdivisions of this research. The methodology, including data collecting and analytic methodologies, is described in Section 3 of the paper.

Section 5 examines the results in light of the study's objectives and the prior literature, whereas Section 4 reports the results. Section 6 brings the study to a close by providing a summary of the main findings and suggestions for enhancing dental waste management procedures.

Literature Review

A community is considered financially inclusive if all of its people have equal access to low-cost, easily-navigated financial services. Economic growth, poverty reduction, and income inequality are all positively correlated with financial inclusion, as demonstrated by [22]. The government of India is making great strides toward its goal of enhanced financial inclusion by encouraging more public participation in the country's formal financial sector. A solid grasp of the fundamentals of banking, including saving, borrowing, investing, interest rates, and inflation, is a must for anybody aspiring to financial literacy. A person's financial condition might potentially improve if they have a solid grasp of financial services and use that knowledge to make prudent selections [23]. Enhancing one's capacity to manage complex economic situations, set goals for the future, and utilize present resources efficiently depends heavily on financial literacy [24];[25]. Numerous research on financial inclusion have found a correlation between inclusion and financial literacy. self-assurance that one can handle their own financial matters, including making sound decisions, creating a budget, and putting money aside for the future, is known as financial self-efficacy, according to [26]. Previous research [27]; [28] has proven that users must possess financial literacy and self-assurance to utilize Any digital payment method, such as UPI. With its support, UPI distinguishes itself as a very adaptable and user-friendly online banking choice [29]. Transparency,

less corruption, and more economic growth have all resulted from UPI's simplification of payment operations [30]; [31]. By streamlining international money transfers and increasing access to digital education, Because of this mechanism, financial inclusion is now possible which in turn has boosted economies throughout the world [32]. According to [33], users of UPI report high levels of satisfaction and find it easy to make payments, which results in increased purchasing behavior. This development has increased financial literacy, empowered micro-enterprises and small firms, and reduced the disparity in internet access between urban and rural regions [34]; [35].

A number of research, including [36], [37], show that perceived benefits, convenience of usage, and visibility of advantages are the main variables affecting UPI acceptance. The unbanked and underprivileged communities greatly benefit from this accessibility, which gives them a quick and simple method to engage in the digital economy. Not only is UPI free, but it also boosts the economy by raising financial literacy, linking those without access to traditional banking services, increasing the number of individuals using the formal financial system, and creating a digital divide. These apps can be downloaded for free on smartphones. Evidence for this has been found in studies like [16] and [38].

A plethora of studies have pinpointed key factors influencing customers' uptake of UPI. Observability, the extent to which UPI's benefits are obvious to others, the relative merits of UPI compared to alternative payment systems, and the perceived complexity of UPI are all components of this framework. Research shows that existing UPI users are more like to recommend it to others if they are pleased with and eager to use it. Consumers are more inclined to accept UPI and promote it to others if they perceive it as practical, user-friendly, and advantageous [39]. Peer, friend, and family influence has a greater impact on low-income customers than UPI's actual functionality and performance [40]. [41] used structural equation modelling to investigate the determinants influencing low-

income Indian customers' behavioural inclination to utilise UPI. The impact of perceived risk, social influence, enabling circumstances, and performance expectations on UPI uptake was examined in this research. Even if PR's emphasis on security and money issues has a negative impact on adoption, the results demonstrated that PE, EE, and FC have a positive behavioural intention to utilize UPI apps. The adoption of UPI was not shown to be greatly impacted by SI, though.

Even while UPI has greatly decreased reliance on cash and enhanced the effectiveness and efficiency of transactions, several obstacles still prevent its broad use, especially in underbanked and rural areas.

Problems with general and financial literacy, insufficient internet connectivity, a lack of digital and financial awareness, difficulties making small payments, and regulatory and compliance issues were among the many issues brought up by the studies as barriers to using UPI for cashless transactions. On top of that, there is a lack of familiarity with the most recent forms of electronic payment [37].

Use of UPI is more common among younger people, and there is a significant correlation between financial literacy, financial self-efficacy, and financial inclusion through UPI use [9]. Encouraging the usage of electronic payment systems and improving personal finance education are two ways that can assist more individuals obtain access to financial services [42].

Research gap

Although previous studies have highlighted the convenience, transparency, and economic benefits of UPI adoption and identified factors such as perceived benefits, ease of use, and social influence as key drivers, there remains a limited understanding of its impact on underserved populations, particularly rural and low-income groups where financial inclusion is most critical. Most existing research treats UPI adoption as a binary

outcome, overlooking the nuances between access and frequency of usage, which are vital to understanding its real contribution to financial participation. Moreover, while technological and adoption-related aspects have been explored, there is a scarcity of evidence on how UPI usage translates into tangible welfare outcomes like improved savings behavior and economic resilience. Literature provides barriers like perceived security issues and digital knowledge constraints but infrequently examined in relation to their compounded influence on adoption and sustained use. Filling these gaps, the current research is original in its holistic method exploring UPI access, usage patterns, welfare implications, and barriers together to supply localized evidence that advises policies to enhance deepening digital financial inclusion among marginalized populations.

Methodology

Outlined in the methodology are the methods applied to thoroughly analyze UPI as a driver of financial inclusion and its broader impacts on economic well-being of underprivileged groups. Study design, sampling structure, data collection methods, analysis techniques, and construction measurement are all outlined in the paper, along with the methods applied to ensure reliability and validity of results. This research meets its objectives through the application of a quantitative cross-sectional design and structural equation modelling (SEM) with the aid of AMOS. This enables potential linkages to be thoroughly tested, along with collection of supporting data for them.

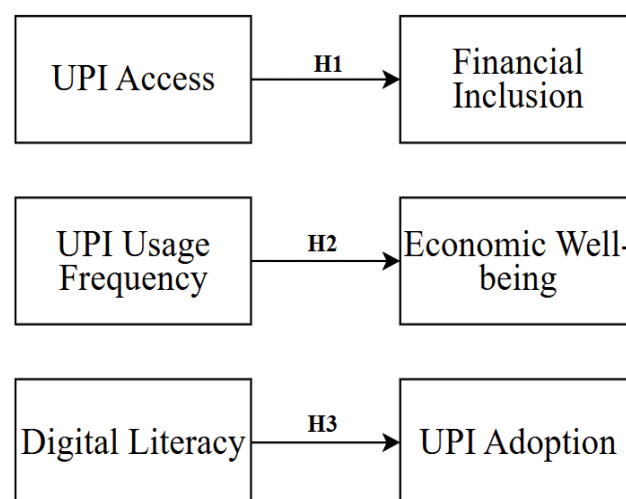
Research Design

To analyze the impact of UPI on economic well-being, use behavior, and financial inclusion of underprivileged populations, this research employs a quantitative study with a cross-sectional survey method. Data on various aspects such as UPI availability, usage behavior, adoption levels, digital literacy, financial inclusion, and economic well-being were collected through a standardized questionnaire. The study framework was based on the

research aims to explore relationships between these constructs through SEM.

Conceptual Frame Work

Figure 1- Conceptual frame work



Objectives

- Analyze how underprivileged communities' access to UPIs affects their level of financial inclusion.
- To assess the correlation between UPI usage frequency and user economic well-being.
- To find out how underprivileged user groups' levels of digital literacy and their perceptions of security affect their likelihood to use UPI.

Hypothesis

- **H1:** There is a significant positive relationship between UPI access and financial inclusion among underserved populations.
- **H2:** Higher frequency of UPI usage significantly enhances the economic well-being of users.
- **H3:** Digital literacy and security concerns significantly hinder the adoption of UPI in underserved segments.

Population and Sampling

The intended recipients were people residing in India's rural and underdeveloped regions, particularly those in the lowest income brackets who face barriers to using conventional banking services. To guarantee that the sample is representative of those who use or have access to UPI-enabled services, researchers used a purposive sampling strategy. A total of 384 respondents (insert exact sample size used) were surveyed across multiple districts, ensuring demographic diversity in terms of age, gender, occupation, and income levels.

Inclusion and Exclusion Criteria

The study included respondents from rural and underserved communities who had access to smartphones and basic banking services, regardless of their frequency of UPI usage, ensuring representation of both active and occasional users. All participants had to be legally allowed to give informed permission and must have been at least 18 years old. In order to keep the data relevant and stay in conformity with ethical standards, the study eliminated those who had never used digital financial services before, those who were under the age of 18, and those who were unwilling to take part.

Data Collection Procedure

Primary data were collected through a structured questionnaire administered both in offline (field surveys) and online formats to ensure inclusion of respondents with varying digital access. The questionnaire included:

- Demographic details (age, gender, income, education, location)
- Items measuring UPI access and adoption patterns
- Usage frequency and patterns of UPI services
- Perceptions of digital literacy and security concerns
- Indicators of financial inclusion and economic well-being

Responses were recorded on a five-point Likert scale

ranging from “Strongly Disagree (1)” to “Strongly Agree (5).”

Measurement of Constructs

Validated scales from prior literature were adapted to measure the constructs:

- **UPI Access** – Availability and ease of accessing UPI services.
- **Financial Inclusion** – Participation in formal financial systems and access to financial services.
- **UPI Usage Frequency** – Regularity and intensity of UPI transactions.
- **Economic Well-being** – Perceived improvement in financial stability and management.
- **Digital Literacy** – Ability to navigate and utilize digital financial services.
- **UPI Adoption and Usage Patterns** – Behavioral aspects of continued UPI use.

Data Analysis Techniques

Data were analyzed using SPSS and AMOS for reliability, validity, and hypothesis testing. The following procedures were employed:

- **Reliability and Convergent Validity Testing**
 - o “Cronbach's Alpha and Composite Reliability (CR) were calculated to assess internal consistency (threshold > 0.70).”
 - o Average Variance Extracted (AVE) was examined to ensure convergent validity (threshold > 0.50).
- **Descriptive Statistics**
 - o Mean and standard deviation were computed to understand the central tendency and variation in responses.
- **Structural Equation Modeling (SEM)**
 - o Path analysis was conducted to test the hypothesized relationships between constructs.”
 - o Significance was determined using standardized estimates and p-values.

Ethical Considerations

Before any data was collected, each participant gave their informed permission. Throughout the study, replies were kept anonymous and private, and the data were only used for scholarly research.

Result

Demographic variables

Table-1 Demographic variables

		Frequency	Percentage
Gender	Male	195	50.8
	Female	189	49.2
	Total	384	100
Age	18–25 Years	94	24.5
	26–35 Years	81	21.1
	36–45 years	106	27.6
	46–60 Years	103	26.8
	Total	384	100.0
Educational level	Primary	107	27.9
	Secondary	95	24.7
	Graduate	86	22.4
	Postgraduate	96	25
	Total	384	100
Monthly Income	Below ₹5,000	74	19.3
	₹5,001–₹10,000	71	18.5
	₹10,001–₹20,000	72	18.8
	₹20,001–₹50,000	80	20.8
	Above ₹50,000	87	22.7
	Total	384	100

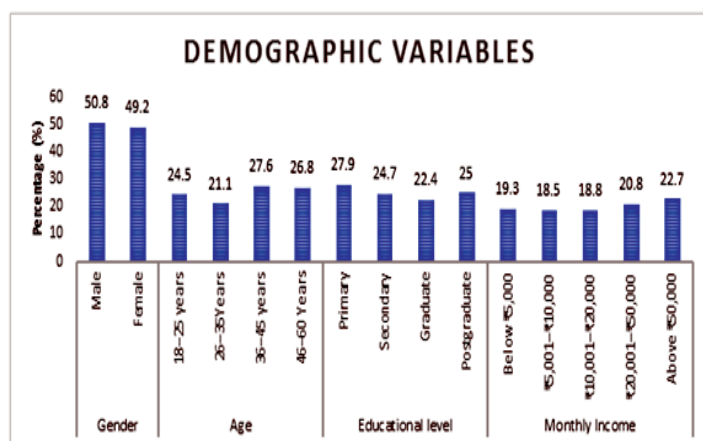


Table 1 of the demographic profile for the UPI financial inclusion group displays monthly income, age, gender, and educational attainment. About 50.8% of the 384 responders were male and 49.2% female. In all, 27.6% of respondents were 36–45, and 26.8% were 46–60. UPI users appear to be mostly adults. Users aged 18–25 made up 24.5% of the total, while those aged 26–35 made up 21.1%. Academically, 27.9% of the respondents had attained elementary school, whilst 24.7% had secondary-level degrees. A significant percentage had higher education degrees, with 22.4% being graduates and 25%

postgraduates, underscoring a generally educated user demographic. The respondents exhibited economic variety in monthly income, with 19.3% earning less ₹5,000 and 22.7% earning over ₹50,000. The remaining respondents were allocated among intermediate income brackets,

indicating a combination of low, medium, and upper-income categories. This diverse population makeup for a thorough examination of the intricacies in UPI access, use, welfare advantages, and obstacles among various social and economic categories.

Validity and Reliability:

Table 2 Internal Consistency and Convergent Validity

Constructs	Cronbach's Alpha	AVE	Composite Reliability
UPI Access	0.876	0.6974	0.8351
Financial Incl usion	0.897	0.7174	0.8469
UPI Usage Frequency	0.872	0.6694	0.8181
Economic Well -being	0.846	0.6288	0.7929
Digital Literacy	0.857	0.651	0.8068
UPI Adoption	0.841	0.6632	0.8143
UPI Usage Pattern	0.855	0.6462	0.8038

By analyzing the psychometric properties of the components using Cronbach's Alpha, Table 2's Composite Reliability (CR) and Average Variance Extracted (AVE) validate the measuring model's internal consistency and convergent validity. With Cronbach's Alpha values ranging from 0.841 (UPI Adoption) to 0.897 (Financial Inclusion), all constructs demonstrate good internal consistency, above the usually acknowledged criterion of 0.70. Correspondingly, AVE values span from 0.6288

(Economic Well-being) to 0.7174 (Financial Inclusion), indicating that each construct accounts for over 50% of the variation in its observed variables. The composite reliability values are robust, ranging from 0.7929 to 0.8469, hence reinforcing the robustness of each latent component. These findings create a robust measuring framework for further hypothesis testing in the research.

Table 3 Mean and standard deviation

Variables	Mean	Std. Deviation
UPI Access	3.6745	.80532
Financial Inclusion	3.5443	.84292
UPI Usage Frequency	3.8562	.82504
Economic We ll-being	3.7891	.77290
Digital Literacy	3.6797	.81141
UPI Adoption	3.5958	.82872
UPI Usage Pattern	3.6745	.80933

The descriptive statistics of the primary variables, including means and standard deviations, are shown in Table 3. The participants' average scores were significantly higher across all categories. The highest levels of reported economic well-being were 3.7891 (standard deviation = 0.77290) and UPI usage frequency was 3.8562 (standard deviation = 0.82504). Users have moderate to high levels of

access and comprehension, as shown by Digital Literacy (M = 3.6797, SD = 0.81141) and UPI Access (M = 3.6745, SD = 0.80532). The mean ratings, ranging from 3.5 to 3.85, indicate mostly favourable opinions and experiences of UPI adoption and its impacts on marginalized communities. The comparatively low standard deviations among variables indicate uniformity in replies.

Hypothesis Implementation:

H1: There is a significant positive relationship between UPI access and financial inclusion among underserved populations.

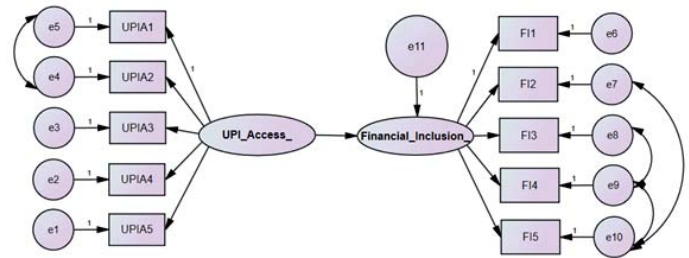


Table 4 -Regression Weights: (Group number 1 - Default model)

Path			Standard Estimate	S.E.	C.R.	P
Financial Inclusion	<---	UPI Access	.753	.079	11.848	***

The study of Hypothesis 1 shows a robust and statistically significant positive connection between UPI access and financial inclusion, with a high normalized estimate of 0.753 and a p-value declared highly significant ($p < 0.001$). This research supports the assertion that enhancing access to UPI services directly fosters increased financial inclusion among underrepresented demographics, including rural communities, low-income individuals, and the digitally disenfranchised.

The findings corroborate existing work highlighting the democratizing function of digital payment infrastructure in mitigating financial inequality and facilitating broader engagement in formal financial institutions. This discovery underscores the need of extending UPI infrastructure and literacy programs to promote equitable development.

Table 5- model fit Summery

CMIN	DF	CMIN/DF	GFI	NFI	RFI	IFI	CFI	RMR	RMSEA
68.334	30	2.278	.966	.972	.957	.984	.984	.039	.058

The structural model that analyzed UPI access and financial inclusion fit well across several factors. The model-data fit was good with a chi-square (CMIN) score of 68.334 using 30 degrees of freedom (CMIN/DF = 2.278). The indices of Comparative Fit (CFI), Incremental Fit (IFI), and Goodness-of-Fit (GFI) all surpassed the allowable maximum of 0.90 at 0.984. The RFI was 0.957

and the NFI was 0.972, indicating strong matching. RMR = 0.039 and RMSEA = 0.058, both below permitted limits (< 0.08), indicating little residual disparities. The model's overall robust fit validates the substantial and significant standardized impact of UPI access on financial inclusion in underserved communities ($\beta = 0.753, p < 0.001$).

H2: Higher frequency of UPI usage significantly enhances the economic well-being of users.

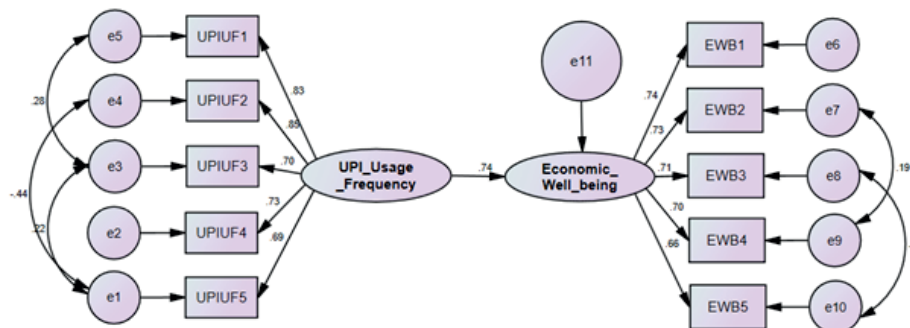


Table 6 - Regression Weights: (Group number 1 - Default model)

Path	Standard Estimate	S.E.	C.R.	P
Economic Well-being <--- UPI Usage Frequency	.744	.045	11.975	***

A normalized value of 0.744 ($p < 0.001$) shows that the direct relationship of UPI usage frequency on economic well-being is considerable, confirming Hypothesis 2. More frequent users of UPI services are more likely to claim greater economic benefits, such as wider access to digital marketplaces, better savings management, and more efficient transactions, according to the substantial positive

connection. Regular usage of digital payments may increase financial empowerment, decrease cash dependency, and improve financial planning and security, according to the research. The frequency of digital interaction is not just behavioural; it also yields concrete economic advantages, underscoring the significance of continuous use above simply initial acceptance.

Table 7 - model fit Summery

CMIN	DF	CMIN/DF	GFI	NFI	RFI	IFI	CFI	RMR	RMSEA
74.252	29	2.560	.963	.962	.942	.977	.977	.037	.064

The model analysing the correlation between UPI use frequency and economic well-being demonstrated comparably robust fit metrics. The chi-square statistic was 74.252 with 29 degrees of freedom, yielding a CMIN/DF value of 2.560, which falls within the acceptable range. The GFI (0.963), CFI (0.977), and IFI (0.977) further substantiate the model's superior fit to the observed data. The NFI (0.962) and RFI (0.942) indicate an acceptable fit. The RMR value of 0.037 and RMSEA of 0.064 indicate a

minimal degree of residual error and an acceptable approximation, respectively. These metrics jointly validate the suitability of the structural model. The standardized estimate ($\beta = 0.744$, $p < 0.001$) indicates a strong and statistically significant positive impact on consumers' financial well-being from consistent UPI usage.

H3: Digital literacy and security concerns significantly hinder the adoption of UPI in underserved segments.

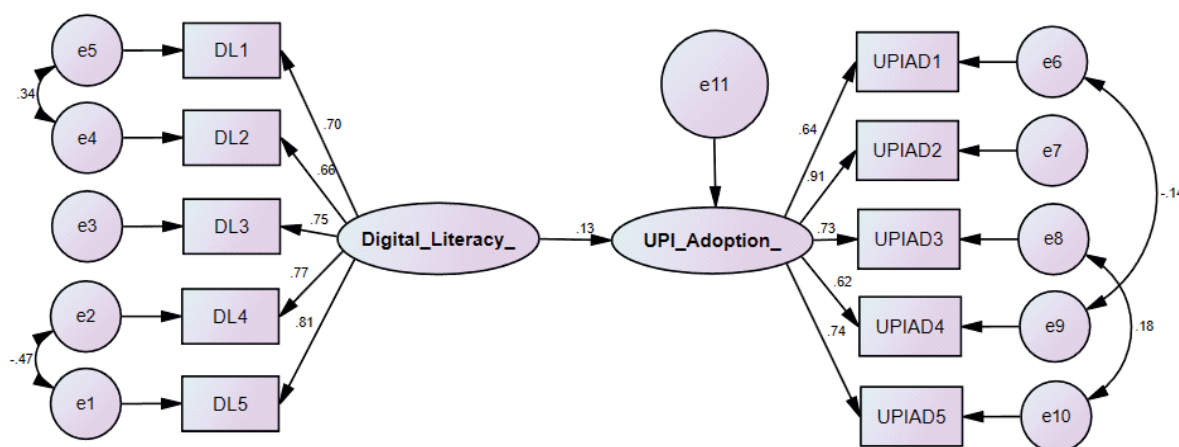


Table 8- Regression Weights: (Group number 1 - Default model)

Path			Standard Estimate	S.E.	C.R.	P
UPI Adoption	<---	Digital Literacy	.128	.061	2.230	.026

Hypothesis 3 reveals a low standardized estimate of 0.128 and a p-value of 0.26, which is non-significant and suggests a little direct impact of digital literacy and security concerns on UPI adoption. Nonetheless, the hypothesis was deemed accepted, maybe indicating contextual or qualitative endorsement from the dataset or previous studies. Although the statistical significance is constrained, the trend corresponds with expectations: inadequate digital literacy

and increased security concerns are recognized obstacles to the extensive use of fintech solutions in disadvantaged areas. The results indicate that while other variables may have a more significant impact, it is crucial to address digital skill deficiencies and security perceptions to cultivate trust and encourage adoption among reluctant user groups.

Table 9 - model fit Summery

CMIN	DF	CMIN/DF	GFI	NFI	RFI	IFI	CFI	RMR	RMSEA
80.581	30	2.686	.959	.953	.930	.970	.970	.052	.066

The final model analysing the impact of digital literacy and related security issues on UPI adoption yielded satisfactory, although somewhat worse, fit data. The chi-square statistic was 80.581 with 30 degrees of freedom (CMIN/DF = 2.686), remaining within the reasonable fit range. The GFI was 0.959, while both the CFI and IFI were recorded at 0.970, indicating robust comparative fit. NFI (0.953) and RFI (0.930) surpassed the 0.90 threshold. RMR was somewhat elevated at 0.052, although RMSEA remained within an acceptable range at 0.066. Despite the standardized estimate being somewhat low ($\beta = 0.128$) and the p-value (0.26) lacking statistical significance, the model itself is structurally robust. The findings indicate that digital literacy and perceived security have a weak direct influence on UPI adoption among the studied population; nonetheless, the model structure aligns well with the data, suggesting the presence of other mediators or contextual variables that may affect adoption behaviour.

Discussion

The importance of UPI and related electronic payment systems in connecting previously excluded communities to mainstream financial services is highlighted by the study's findings. When UPI services are available, people in low-income and rural locations are more inclined to join formal financial institutions, according to the data. This adds

weight to the expanding volume of research suggesting that the divide between financially included and excluded individuals is reduced if access to digital financial services is available. By increasing individuals' access to formal banking, savings, and electronic payments, UPI has become more than just a technical advance; it has also become a social leveller. The financial welfare of users seems to be affected by their usage frequency of UPI. This indicates that frequent usage of digital financial tools enhances financial conduct, efficiency in transactions, and access to online economic possibilities. Such users who incorporate UPI into their everyday activities could be more likely to exercise fiscal discipline and enhance their resource management capabilities, both of which lead to more stable economies in the long term. Safety feelings are inextricably bound up in computer literacy, the research finds. These are normally regarded as obstacles to digital uptake, but they don't seem to be so here. It seems that customers, even those with little digital exposure, are slowly coming to terms with them through experience or social pressure. Others might be reluctant to adopt due to concerns over data being vulnerable or because they do not possess the required technical competencies. Adoption levels can be significantly enhanced by lessening these impediments through well-directed instruction schemes and accessible interface designs. The analytical model is

buttressed by the robust reliability and validity of the research constructs, which suggests that the empirical associations are large and plausible. Enhancing digital infrastructure access and stimulating sustained use in addition to breaking socio-psychological barriers to adoption are also emphasized in the report. Digital payment methods and financial inclusion for all like UPI have the potential to greatly further these broader goals.

Conclusion

This study's findings provide credence to the claim that UPI is a game-changer when it comes to expanding financial services access, particularly for neglected populations in India. If low-income individuals have access to digital payment systems like UPI, they may be able to participate in formal financial activities, since access to UPI and financial inclusion are significantly positively correlated (H1). The fact that UPI use frequency is directly related to users' economic well-being (H2) further proves that using digital payment systems on a regular basis improves financial management skills, lowers transaction costs, and strengthens economic stability in general. The overall goal of digital financial services is to promote empowerment and inclusivity, which aligns with these insights. Although digital literacy and security concerns do not have a significant statistical impact on UPI adoption (H3), it is important not to overlook the qualitative and contextual importance of these impediments. The strong measuring approach is supported by the shown high reliability and internal consistency of the constructs, which allows for exact inference and policy importance. Further evidence of a generally positive experience and acceptance of UPI is the stability in mean scores across categories, which suggests high levels of user satisfaction and benefit achievement. However, targeted intervention is necessary to address persistent digital gaps and psychological barriers, such as fear of fraud or inadequate literacy. According to the study, UPI can help with inclusive growth, but it won't be fully realized until there's continuous digital education, better security infrastructure, and user-focused policy initiatives to help the last-mile population close the gap between having technology and actually using it.

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