

Digital Trust and UPI Usage Among Rural Women in Bhavnagar District: A Qualitative Study of Barriers, Adoption, and Empowerment

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Abstract: This research explores the complex interplay between digital trust and the adoption of the Unified Payments Interface (UPI) among rural women in the Bhavnagar district of Gujarat. Despite India's rapid digital transformation, a significant gender-based digital divide remains, particularly in rural ecosystems where technology is often perceived through a lens of apprehension. Using a qualitative phenomenological design, this study investigates the lived experiences of women across four diverse blocks: Sihor, Talaja, Palitana, and Gariyadhar. Through data triangulation involving direct field observations and semi-structured interviews, the research identifies that digital adoption is driven less by hardware access and more by psychological and social Trust Anchors.

Findings highlight the Sihor Paradox, where smartphone ownership does not correlate with functional digital agency due to techno-anxiety and literacy barriers. Conversely, observations in Palitana and Talaja illustrate how social proof and immediate utility can bridge the trust gap, especially when supported by auditory feedback mechanisms like the Sound Box. A critical outcome of the study is the identification of the Digital Rice Jar effect, where UPI provides women with unprecedented financial privacy and bargaining power within the domestic sphere. The paper concludes that digital trust is a fluid social construct requiring localized intervention. Recommendations include the institutionalization of Digital Sakhi programs and the comprehensive vernacularization of error interfaces into the Gujarati dialect to ensure that rural women transition from passive observers to empowered participants in India's digital future.

Keywords: UPI, Digital Trust, Rural Women, Qualitative Study, Bhavnagar District, Financial Empowerment.

I. INTRODUCTION

1.1 The Digital Revolution and the Gendered Divide:
This section contrasts India's global leadership in digital payments with the local reality of rural women. While the JAM Trinity of Jan Dhan, Aadhaar, and Mobile provides the necessary infrastructure, a Gendered Digital Divide remains. The core finding is that Access does not equal Agency; having a smartphone is not the same as having the financial independence or the digital trust to use it. In Bhavnagar, phones are often shared or used only for entertainment, leaving an invisible wall that prevents women from participating in the digital economy.

1.2 The Context of Bhavnagar: A Microcosm of Gujarat:

This section explains why Bhavnagar is the ideal location for this study, describing it as a unique laboratory where agriculture and industry meet. It focuses on four specific blocks of Sihor, Talaja, Palitana, and Gariyadhar each representing a different socio-economic environment. The summary highlights that although women are vital to the local economy like working in dairy, tailoring, and small trade, their use of digital tools is restricted by social norms and a hesitation toward invisible money.

1.3 Problem Statement: The Trust Gap:

This section identifies the Trust Gap as the primary obstacle to digital adoption. It uses a specific field observation from Sihor where a woman with a smartphone still chose to search for physical cash for a small rickshaw fare to prove that technology alone is

not enough. It introduces Techno-Anxiety, explaining that for many rural women, UPI feels like a Black Box where the fear of network errors or language barriers creates a psychological barrier to usage.

1.4 Research Objectives:

This section provides the specific map of what the study aims to achieve. It shifts the focus from broad problems to four actionable goals identifying the socio-psychological barriers in Bhavnagar, comparing how digital behavior differs across the four blocks of Sihor, Talaja, Palitana, Gariyadhar, evaluating the impact of auditory feedback on building trust, and measuring how digital agency enhances a woman's financial privacy and empowerment.

1.5 Significance of the Study:

This final section of the introduction explains why this research is vital for the vision of Viksit Bharat. It argues that financial empowerment for rural women is a necessity, not an option. The study is significant because it moves beyond cold numbers to provide qualitative insights. It emphasizes that for a woman in rural Gujarat, using a QR code is more than a payment it is a claim of space in the modern economy. The ultimate goal is to help design vernacular tools that respect the culture of the Kathiyawadi region.

II. LITERATURE REVIEW

2.1 The Global and National Perspective on the Digital Gender Divide

Extensive scholarship has documented that the Digital Divide is no longer just about the availability of physical infrastructure, but about the quality of engagement with that infrastructure. Globally, research by the World Bank (2023) indicates that women in developing economies are 20% less likely than men to use mobile internet. In the Indian context, this gap is exacerbated by deep-seated patriarchal structures. Scholars like Khera (2021) argue that even when women are provided with mobile devices, their usage is often mediated by male relatives husbands, brothers, or sons who act as gatekeepers to the digital world. This Mediated Agency prevents rural women from developing the independent skills necessary for financial autonomy.

2.2 Theoretical Framework: The Technology Acceptance Model (TAM):

This section applies the famous TAM model (1989) to your study in Bhavnagar. It explains that digital adoption depends on two things: Perceived Usefulness and Perceived Ease of Use. The summary highlights a specific gap in rural Gujarat: while women recognize that UPI is useful for saving time and privacy, they find it difficult to use because of language barriers and lack of training. This makes the technology feel alien, leading to the digital hesitation you observed in areas like Sihor.

2.3 Socio-Cultural Barriers and "Techno-Anxiety":

This section explains the psychological fear of technology, known as Techno-Anxiety. It describes how rural women view digital apps as a Black Box a mysterious system they don't fully understand. Because they manage very tight household budgets, they fear that one wrong click will result in a permanent loss of money, leading to a state of paralysis where they prefer not to use the app at all. Additionally, the use of English in error messages acts as a barrier, making these women feel that digital banking is only for the educated elite, not for them.

2.4 Digital Trust and the Role of Feedback Mechanisms:

This section explains that digital trust is built on three pillars: System Trust, Institutional Trust, Social Trust. It highlights the Sound Box as a revolutionary tool that acts as a Trust Surrogate. Since rural women can no longer feel physical cash leaving their hands, the loud voice confirmation serves as an auditory digital receipt. In markets like Gariyadhar and Palitana, this public validation is essential because it removes the fear of a failed transaction and builds the collective confidence needed to use UPI.

2.5 Financial Agency and Empowerment

The literature on female empowerment frequently highlights Financial Privacy as a key driver of agency. Traditional saving methods such as hiding cash in rice jars or kitchen containers are vulnerable to discovery and appropriation by other family members. Agrawal (2023) notes that digital wallets provide a Secret Space for women's earnings. When a woman in Bhavnagar receives payment for dairy work or sewing directly

into a UPI-linked account, she gains a level of Information Asymmetry that protects her savings. This digital autonomy allows her to plan for long-term goals, such as children's education or healthcare, without immediate domestic interference.

2.6 Research Gap: The Localized Qualitative Void:

While there is significant quantitative data on UPI transactions at the national level, there is a distinct lack of Localized Qualitative Research that focuses on the specific cultural nuances of the Saurashtra region. Existing studies often treat Rural India as a monolith, ignoring unique interplay of local dialects like Kathiyawadi, regional trade like Palitana's textiles, and block-specific industrialization like Sihor. This study seeks to fill this gap by providing a granular, block-by-block analysis of digital trust among the women of Bhavnagar.

III. RESEARCH METHODOLOGY

3.1 Research Paradigm and Design

This study is rooted in the Qualitative Phenomenological Approach, which seeks to understand the lived experiences of individuals within their specific socio-cultural contexts. Since Digital Trust is an intangible psychological construct, a quantitative survey would merely provide numbers without explaining the underlying emotions of fear or empowerment. By adopting a qualitative design, the researcher can explore the transition of rural women in Bhavnagar from traditional cash-based systems to the Unified Payments Interface (UPI). The primary goal is to capture the narrative of The Human behind the Handset, focusing on the subtle shift from technology apprehension to financial agency.

3.2 Data Triangulation: Ensuring Validity:

To ensure the academic rigor and validity of the findings, this research employs Data Triangulation. This involves using multiple sources and methods to cross-verify the data:

Direct Field Observations: Observing real-time behavior in marketplaces and public transport e.g., the rickshaw incident in Sihor.

Semi-Structured Interviews: Engaging in deep conversations to understand the why behind the observed behavior.

Secondary Data: Referencing NPCI reports and district socio-economic reviews to align local findings with broader national trends. This multi-dimensional approach ensures that the study remains objective and minimizes researcher bias.

3.3 Study Area: The Four Blocks of Bhavnagar:

The research was conducted across four strategically selected blocks in the Bhavnagar district, providing a representative cross-section of the region:

Sihor Block: An industrial-rural hybrid site where the gap between device ownership and device usage is most visible.

Talaja Block: A bustling commercial hub where hybrid payment behaviors like cash or digital are common among younger women.

Palitana Block: A traditional textile and pilgrimage center that offers insights into age-related digital adoption.

Gariyadhar Block: An agricultural marketplace where the interaction between different social classes Vendors vs. Professionals highlights the normalization of UPI.

3.4 Participant Selection: Inclusion and Exclusion Criteria:

The study utilized Purposive and Snowball Sampling to identify 30 primary participants. To maintain the focus and integrity of the qualitative data, specific criteria were established:

Inclusion Criteria: Participants must be female, residents of the rural Bhavnagar district for at least 5 years, possess a bank account, and have access to a smartphone.

Exclusion Criteria: Women residing in urban Bhavnagar city, those without any access to mobile devices, and professional digital trainers were excluded to ensure the data reflects the natural

“adoption process of rural laypersons. The researcher leveraged the network of local Sakhi Mandals Self-Help Groups to reach women who were otherwise hesitant to speak with outsiders.

3.5 Data Collection Methods

3.5.1 Non-Participant Observation

The researcher spent approximately 15 days as an observer in various Natural Settings. A pivotal observation occurred in Sihor, where two women in an auto-rickshaw struggled with a ₹30 payment. Despite having a smartphone, the lack of "Functional Digital Trust" forced them to rely on a male bystander for cash change. Such ethnographic snapshots are the backbone of this study, providing evidence of Digital Hesitation that participants might not admit to in a formal interview.

3.5.2 Semi-Structured Interviews

Following the observations, in-depth interviews were conducted. These were not rigid Q&A sessions but Guided Conversations. This allowed women to share personal anecdotes such as the pride of scanning a code for a ₹450 purchase in Talaja or the safety felt when hearing a Sound Box confirmation in Palitana.

3.6 Positionality of the Researcher

A unique strength of this methodology is the researcher's Positionality. Being a native of the Bhavnagar region and fluent in the local Kathiyawadi and Gujarati dialect, the researcher acted as an Insider-Observer. This cultural proximity allowed for the building of Rapport, which is often missing in large-scale institutional surveys. Participants felt comfortable using local idioms like *Mane dar laage che* or *Have have vishwas aayo Now*, which were then translated into academic English without losing their emotional essence.

3.7 Data Analysis: Thematic Content Analysis

The collected data comprising field notes, interview transcripts, and voice memos underwent Thematic Coding. The researcher manually identified recurring Nodes such as:

The Literacy Barrier: Difficulty in navigating English interfaces.

Mediated Agency: Dependency on husbands/sons for OTP verification.

Psychological Empowerment: The feeling of Digital Freedom after a successful solo transaction.

3.8 Ethical Safeguards

Given the sensitive nature of financial data, Verbal Informed Consent was obtained. Pseudonyms were used to protect the identity of the women. The researcher ensured that no private banking information like PIN/Passwords was asked, focusing solely on the "Process and Perception" of using UPI.

IV.FINDINGS AND DISCUSSION

4.1 Mapping the Digital Trust Spectrum

The research conducted across the four blocks of Bhavnagar reveals that Digital Trust is not a static milestone but a dynamic journey. By analyzing the field notes, this study categorizes rural women into four distinct trust-based personas. To visualize this, the following chart represents the transition from hesitation to mastery.

4.1.1 The Sihor Paradox: The Psychology of the Non-User

The case in Sihor where two women preferred seeking cash change from a bystander for a ₹30 rickshaw fare rather than using a smartphone serves as the study's most critical qualitative anchor. This behavior exemplifies the Loss Aversion Theory. For a rural woman with limited income, the perceived risk of a ₹30 digital transaction failing is psychologically more taxing than the physical effort of finding cash change. In Sihor, the research found that trust is deeply rooted in Tactile Reliability. Cash is tangible; a UPI transaction is a promise. Until the promise of technology becomes as reliable as the feel of paper currency, women in this demographic remain in the Non-User category.

4.1.2 Talaja: The Bridge of Functional Necessity

In the commercial setting of Talaja, the observation at the bookstore—where a woman paid ₹150 via UPI to complete a ₹450 purchase highlights the Utility-Trust Correlation.

As shown in the chart above, when the completing a necessary purchase for education is high, the Perceived Risk decreases. In Talaja, digital trust is being built not through advertisements, but through Micro-Problem Solving. UPI here acts as a contingency plan, proving that commercial environments are the fastest breeding grounds for digital adoption among rural women.

4.2 Demographic and Social Insights

4.2.1 Palitana: Breaking the Age Myth

The observation in Palitana's textile market, where a 55-year-old woman utilized a QR code for a saree purchase, is a seminal finding. It suggests that in the presence of Social Proof, age barriers dissolve.

In Palitana, trust is a Collective Experience. When high-value items like sarees are bought digitally, it legitimizes the technology for the entire household. This shift indicates that digital trust is maturing from small daily needs to significant lifestyle choices.

4.2.2 Gariyadhar: The Democratization of Payments

In the Gariyadhar vegetable market, the interaction between a female vendor and professional women like a Doctor and a Teacher demonstrates the Top-Down Trust Flow. When individuals with high social capital professionals insist on digital payments, they inadvertently act as Digital Mentors for the vendor. This creates a push-pull effect where the vendor must adopt UPI to retain her Premium customers, thereby building trust through economic necessity.

4.3 Thematic Discussion: Barriers and Empowerment

4.3.1 The Sound Box as a Trust Surrogate

A common finding across all four blocks was the psychological impact of the Sound Box.

As illustrated in the flowchart, for the rural user, the Auditory Feedback serves as the final seal of trust. In Gariyadhar and Palitana, women explicitly mentioned that they felt cheated or anxious without the voice confirmation. The sound box effectively replaces the handshake of a cash transaction, providing a public and immediate validation that reduces Transaction Anxiety.

4.2.2 Financial Agency: The Digital Galla

Beyond the technical transaction, the interviews revealed a deeper layer of Empowerment. In rural Bhavnagar, many women use UPI as a Secret Wallet.

Privacy: Unlike physical cash hidden in a Rice Jar, which can be easily discovered by other family members, a UPI account offers Information Asymmetry.

Agency: Women reported a sense of Digital Freedom when they could receive stitching or dairy income directly into their phones.

This transformation from a Passive Bank Account Holder to an Active UPI User marks the transition from financial inclusion to Financial Agency.

4.4 Synthesis: Bridging the Divide

The findings suggest that Bhavnagar is in a Middle State of digital evolution. We have the Master Users in Palitana's saree shops, the Pragmatic Adopters in Talaja's bookstores, and the Resistant Non-Users in Sihor's rickshaws.

The primary difference between these groups is not the availability of technology, but the Social Support System surrounding them. Where women have a supportive environment like the professional customers in Gariyadhar or the peer groups in Palitana, trust is high. Where women are isolated or face technical glitches alone like in Sihor, the barrier remains insurmountable.

Conclusion of Findings:

The data from Bhavnagar indicates that Digital Trust is a social product. In Sihor, the lack of trust led to a loss of independence, while in Palitana and Talaja, the presence of trust led to enhanced financial agency. The study concludes that for rural women, the journey toward UPI is not about learning an App, but about gaining the Confidence to Transact. The bridge between being a Non-User and an Empowered User is built through localized trust-building mechanisms like the Sound Box, Peer Validation, and Functional Utility.

V.CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Summary of Research Findings:

This research has explored the intricate layers of digital trust and UPI adoption among rural women in the Bhavnagar district. The study reveals that the transition from a cash-dependent lifestyle to a digital-first economy is not merely a technical upgrade but a

profound socio-cultural shift. Through the Sihor Paradox, we identified that hardware access is insufficient without functional trust. Conversely, the cases in Palitana and Talaja demonstrated that when utility and social proof align, rural women become enthusiastic adopters of financial technology. The findings conclude that Digital Trust is a fragile yet transformative bridge it is built through successful micro-transactions and auditory validations but is easily shattered by language barriers and network failures.

5.2 Theoretical and Social Implications:

The study aligns with the Technology Acceptance Model (TAM), suggesting that for rural women, "Perceived Usefulness" must significantly outweigh Perceived Risk for adoption to occur. Socially, the research highlights that UPI usage provides a unique form of Information Privacy. The Digital Rice Jar effect where women save money in digital wallets away from household surveillance represents a modern evolution of traditional financial management. This autonomy is a cornerstone of psychological empowerment, shifting the woman's role from a passive recipient of funds to an active financial manager.

5.3 Policy Recommendations for Bhavnagar District:

To bridge the digital gender divide and foster a more inclusive Viksit Bharat, the following localized policy interventions are recommended:

5.3.1 Deployment of "Digital Sakhi":

Trust in rural Gujarat is communal. The District Administration should appoint and train Digital Sakhis within local Self-Help Groups [SHGs]. These mentors should be women from the same village who can demonstrate UPI usage in a low-pressure environment. A peer-led training model reduces the techno-anxiety often felt when interacting with bank officials or male trainers.

5.3.2 Vernacularization of Critical Error Messages

While many apps have Gujarati interfaces, the critical Transaction Failed or Security Warning messages often revert to English. FinTech companies must ensure that every stage of the user journey especially error resolution is available in the local dialect.

Auditory alerts in the Kathiyawadi dialect would significantly enhance the sense of security for neo-literate users.

5.3.3 Universalizing the Sound Box Infrastructure

The study found that the Sound Box is the most effective trust-builder in markets like Gariadhar. Policymakers should provide subsidies for small-scale rural vendors like vegetable sellers, milk dairies to install these devices. When a woman hears her payment being confirmed publicly, it provides a psychological "receipt" that is essential for building long-term digital trust.

5.3.4 Security Awareness through Folk Media

Instead of traditional brochures, digital safety messages should be disseminated through Bhavnagar's rich tradition of Bhavai folk theatre or Garba. Using storytelling to explain concepts like Do not share OTP or QR codes are for sending, not receiving money will make digital security more relatable and less intimidating.

5.4 Limitations and Scope for Future Research

While this study provides a deep qualitative dive into four blocks of Bhavnagar, it is limited by its sample size of 30 primary participants. Future research could expand this to a quantitative study covering all blocks of the district to provide statistically significant data. Additionally, a longitudinal study could track the long-term impact of UPI usage on the "Wealth Accumulation" patterns of these rural women over five to ten years.

5.5 Final Concluding Remarks

In conclusion, the journey of a rural woman in Bhavnagar from being a hesitant observer in a Sihor rickshaw to an empowered consumer in a Palitana saree shop is a testament to the power of digital financial inclusion. UPI is more than just an app; it is a catalyst for dignity. When a woman scans a QR code, she is not just paying for a commodity; she is claiming her space in the digital future of India. By addressing the barriers of language and literacy through localized trust-building mechanisms, we can ensure that no woman is left behind in the journey toward a truly digital and empowered society.

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