

The Role of UPI in Promoting Cashless Transactions among Small Businesses – A Transaction-Cost and Technology Adoption Perspective

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Abstract

The Indian Unified Payments Interface (UPI) has seen its volume grow from a total of roughly ₹21.3 lakh crore worth of transactions in the fiscal year 2019-20 to more than ₹213 lakh crore in January 2025, where India accounts for around 40% of real-time payments in the world. A good deal of this rise can be attributed to person-to-merchant transactions facilitated by initiatives such as the zero merchant-discount rate system and the ₹1,500 crore program for incentivizing low value UPI transactions from consumers to small merchants in FY 2024-25. Yet, whether this overall rise in volume reflects true and continued adoption by the country's smallest firms – namely kirana stores, street hawkers, and micro businesses that do not maintain financial records – is relatively unexplored. Most of the research on this issue focuses on data from consumers rather than merchants..

The present study seeks to fill the gap via a secondary data synthesis based on NPCI transaction statistics, the Reserve Bank of India and Ministry of Finance reports, and the empirical literature on digital payments and MSME finance. The theoretical framework of this work will be informed by both a transaction-cost and a technology-acceptance perspective. UPI will be considered not just as a payment system but as a tool reducing costs of searching, processing, securing and reconciling transactions that previously were connected to using cash. The adoption of this technology will be discussed in relation to performance expectancy, effort expectancy, social influence, and facilitating conditions as per the Unified Theory of Acceptance and Use of Technology (UTAUT). The paper will attempt to collect information from available secondary sources regarding the patterns of merchant-side UPI adoption, outline barriers to its use that have been highlighted in previous research and prevent small business owners from making a complete transition from cash to digital payments and report on the correlation found between UPI transaction history and formal credit access.

Keywords: UPI – cashless transactions – small businesses – MSMEs – transaction cost – technology adoption – merchant discount rate

1. Introduction

UPI has proven to be the most successful payment system launched till date, With the help of volume calculations. As per the Ministry of Finance, the transaction value of UPI increased from ₹21.3 lakh crore in 2019-20 to ₹213.8 lakh crore in January 2025, out of which ₹59.3 lakh crore comprises P2M transactions (Ministry of Finance, 2025). As of October 2024, the system has processed 16.58 billion transactions worth ₹23.49 lakh crore through 632 connected banks. This is a growth of 45 percent as compared to the same period in the previous year (Ministry of Finance, 2024). Also, India had the highest percentage of RTA transactions in the world in 2023 at 49 percent (Ministry of Finance, 2025, citing ACI Worldwide, 2024). In the survey carried out by the Finance Ministry among 10,378 respondents in 15 states, it was found that 57 percent of transactions were made using UPI, whereas cash transactions constituted only 38 percent, with adoption rate of UPI among small merchants being 94 percent (Statesman News Service, 2026).

The numbers of this sort represent the system and not the store. In all of those numbers, the word “adopted” means that the merchant has a QR code and has been paid through that. It doesn’t mean that the merchant has stopped taking payments in cash, stopped going to the bank in queues to get change or the way in which the cash earned on a daily basis is accounted for. A kirana owner could be accepting UPI only in one-fourth of the transactions while depositing cash on a daily basis. Has UPI made the small enterprises cashless or just cash-lite is something which is not revealed by the aggregate numbers. The research aims to fill this vacuum by focusing upon two questions repeatedly asked throughout the chapters. One is the question of cost – how does UPI affect the cost structure of a cash-based small enterprise? The second is the question of conditions – what makes a small merchant adopt UPI and more importantly, continue using it? The analysis brings together three different theoretical threads. On the one hand, there is transaction-cost economics, as developed by Coase (1937) and Williamson (1979). On the other hand, the Unified Theory of Acceptance and Use of Technology (UTAUT) as outlined by Venkatesh et al. (2003) serves as another angle. Finally, network externalities in adoption (Crouzet et al., 2023) can be used to bring the previous approaches together because a merchant is constrained both by nearby shops and by customers that had previously expressed their preferences.

This background goes well beyond just theory. Beginning January 2020, there has been no merchant discount rate applicable to UPI payments made by merchants (All India Radio News, 2025). However, this state of affairs is not stable indefinitely. Under a new arrangement explained by the National Payments Corporation of India (NPCI) on 15 September 2026, merchants will be charged MDR of 0.4 percent for certain types of transactions exceeding ₹2,000 beginning 15 October 2026; transactions up to ₹2,000 and small merchants that process transactions worth up to ₹1 lakh per month using UPI QR codes will continue to be exempt (SCC Online Blog, 2026). The change gives us an empirical way to test the cost-and-conditions hypothesis discussed in Section 8.

The main contribution of this paper is synthesis in nature. This paper synthesizes the merchant side of evidence found scattered in the marketing, information systems, and economic literature into one cost and adoption framework and proposes four testable propositions based on the MDR reform. The next section develops the framework that I propose. Section 3 reviews the relevant literature and points out the gap therein. Section 4 describes the methodological approach and its shortcomings. Section 5 traces the evolution of UPI and the cost regime associated with the merchants. Sections 6 and 7 deal with cost and adoption, respectively. Section 8 presents the MDR reform and the propositions along with their implications.

2. Theoretical Framework: Cost, Acceptance and Externalities

2.1 Cash is not free

Coase (1937) explained why firms exist due to the fact that using the price system has a cost since it takes money to discover prices, bargain and enforce the agreement. Williamson (1979, 1985) furthered the analysis by associating transaction costs with bounded rationality, opportunism and asset specificity. He saw the selection of governance systems as a reaction to such costs. In the case of the small retailer, the logic is quite obvious and clear. The acceptance of cash is apparently costless as there is no fee charged but the merchant has some costs that remain hidden just because they are incurred in time and worries and not in dollars.

There are four different types of costs that are necessary for future discussion. The costs of handling involve counting, sorting and making change. The costs of security refer to storage, transporting receipts to the bank and protection from theft and counterfeiting of money. The costs of reconciliation have to do with balancing the till with the sales and keeping the records which matter at the end of the month. The information costs stem from the fact that a cash-based business is hard to verify. The digital money transfer technique is capable of cutting down the expenses that each stakeholder incurs, but this could happen differently for each stakeholder. This general principle can be put into perspective from a study done by Jack and Suri (2014) whereby the cut down on transaction costs led to change in how risks were shared in Kenya through remittance.

2.2 Acceptance is not automatic

The savings in paper do not mean adoption. As stated by Davis (1989), usefulness and ease of use are predictors of technology adoption. The Unified Theory of Acceptance and Use of Technology brought together eight previous models and divided them into four categories determining intention and use: performance expectation, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003). The consumer-based version of the model, UTAUT2, incorporates hedonic motivation, price value and habit (Venkatesh et al., 2012).

Price value should be given special consideration in merchants. The merchant is the party that incurs the merchant discount rate, hence, price value becomes the means by which the cost part of Section 2.1 enters into the adoption model. Similarly, Bhattacharjee et al. (2024) use the same strategy to incorporate cost and compatibility in TAM and UTAUT2 hybrid model for kirana stores. This paper uses price value as the medium through which transaction cost theory enters into the acceptance model.

2.3 Externalities

Payment systems are network goods. According to Crouzet et al. (2023), using data from India during demonetization in 2016, a significant but temporary decrease in cash usage led to a permanent increase in adoption of e-payments by retail businesses, with substantial spillovers between firms located close to each other and path dependence in adoption. In the UTAUT language, this is social influence; in economic terminology, this is a positive adoption externality. In either case, the calculation of individual retailers depends on what customers and other retailers do in their immediate vicinity.

The framework which will be used throughout this paper can be summarized as follows. UPI reduces all four categories of transaction costs. If an individual retailer benefits from this reduction or not depends on whether UTAUT criteria hold, on price value, and on the network. A change in fees paid by a retailer changes its price value immediately and indirectly via the network affects the price value of others.

2.4 Adoption, depth and continuance

The ambiguity in the literature is mainly because of the use of the word "adoption" for three distinct

concepts, which is maintained in the current paper. Adoption refers to the acceptance of UPI by a merchant in general. Depth is the percentage of the merchant's total sales volume that is done using UPI, as opposed to cash. Continuance refers to the persistence of both adoption and depth over time, as opposed to abandonment after the initial test. Only the latter two concepts indicate cashlessness of a business, while adoption in itself may coexist with mostly cash-based activity. Cost concern is related mostly to depth because it increases with the share of sales done without cash, while the acceptance concern relates to all three.

3. Literature Review and the Research Gap

The majority of research carried out in India about the adoption of UPI has been focused on consumers' experience. For example, in their study of 416 UPI users, Padma Kiran and Sailaja (2025) discovered that facilitating conditions, performance expectancy, effort expectancy, social influence, perceived promotional benefits, and perceived trust had a significant effect on the adoption intention, whereas add-on services did not have one directly. Razi-ur-Rahim et al. (2024) adapted the meta-UTAUT framework for Indian UPI consumers, whereas Fahad (2022) applied diffusion-of-innovation theory. Further, Padma Kiran and Sailaja (2025) observe that the previous research has been contradictory with regards to the importance of UTAUT constructs at an individual level, which is a caveat not to generalise the findings across samples.

The literature specific to merchants is more scattered. Ligon et al. (2019) explore the reasons behind low uptake of digital payment technology by small-scale merchants in Jaipur; according to Padma Kiran and Sailaja (2025), demonetisation, demand from customers and usability are among the factors, while having a bank account, smartphones, internet access and technological knowledge are prerequisites. Mishra et al. (2022) conduct research on the adoption of mobile payment technology by merchants working in unorganised retail sector in India, while Adhikary et al. (2021) investigate the effect of digital payment adoption on their performance. Further, Bhattacharjee et al. (2024) conducted survey among 285 kirana store owners in five major cities and observed that cost, compatibility, perceived ease of use and perceived usefulness significantly affect digital adoption intentions; 91.6 percent of the owners reported usage of digital technology for receiving payments. Regarding continuance, the motivations of microentrepreneurs and firms behind the usage of mobile payments are explored by Pal et al. (2023), and Tang and Tsai (2024), while Sinha and Singh (2023) focus on the effect of perceived experience on the behavioral intention of merchants.

Economic analyses provide further explanations. The process of demonetisation and adoption of mobile payments due to network effects is discussed by Crouzet et al. (2023), and Jack and Suri (2014) offer insights into transaction costs in another case of adoption of digital money.

There are three common limitations for the literature considered here. Firstly, there is a lack of research on merchant adoption in multiple cities or metropolitan cross-sections, which is pointed out by Bhattacharjee et al. (2024). Secondly, adoption of a technology among merchants is mostly evaluated as a binary decision or intention, but not as the percentage of cashless transactions, hence there is no answer to the cash-lite problem of Section 1. Lastly, these studies were conducted before changes in the merchant fee regime took place. What is needed is a cost-based theory of merchant adoption that could be verified when the MDR reform takes place.

4. Methodology

This paper relies on secondary data and adopts a qualitative approach. There are three types of sources employed in this research paper: official statistics and documents released by the Ministry of Finance and NPCI; peer-reviewed papers on UPI, mobile payments, and microbusiness technological adoption; as well as media and law news about new official announcements on matters not yet published in peer-reviewed journals. Sources were chosen purposively rather than exhaustively. Any studies that focus on merchants, retailers or microenterprises or that offer the theory or identification needed for the merchant-side argument, as does Crouzet et al. (2023) and Jack and Suri (2014), are included in the paper.

There are four limitations to note. First, no primary data collection was done, thus the mechanism presented in Sections 6 and 7 is an interpretation of existing research and must be taken as such for testing. Second, the quality of evidence varies. Peer-reviewed researches have different samples, regions and measures. Moreover, some of the findings, such as those presented in the Finance Ministry survey, come to this paper based on the press report of the commissioned study, and one needs to refer to the original report before using it in any policy-related analysis. Third, the merchant fees framework is relatively new. The story of the framework presented in this paper is based on publicly available information up to 28 September 2026, when the framework is supposed to start its implementation on 15 October 2026. Finally, the analysis considers small businesses broadly, while the evidence does not differentiate between kirana stores, street vendors and bigger micro-enterprises, each facing different ticket size and cost structure.

5. Context: UPI's Growth and the Merchant Cost Regime

UPI was introduced by NPCI in 2016 and regulated by the Reserve Bank of India. The system connects bank accounts via a single mobile application and provides instant round-the-clock money transfer services (Ministry of Finance, 2024). The rise of UPI has been rapid and uneven in the desired way for merchants: payments made under P2M transactions have reached ₹59.3 lakh crore as of January 2025, and the policy measures adopted by the government have explicitly targeted the small end of this stream (Ministry of Finance, 2025).

The merchants in this context are diverse and numerous. As per industry data cited by Bhattacharjee et al. (2024), the retail sector in India is characterised by disorganisation and employs around one out of every twelve people, accounting for around one tenth of the country's GDP, where kirana shops act as local vendors of goods and usually provide personal credit to frequent customers. These merchants operate with thin working capital and cannot afford any kind of fixed costs, which is why the cost structure of a payment tool becomes a significant issue for such merchants, rather than for franchise stores. Street vendors and micro-enterprises have these characteristics in even greater measure, but published literature seldom separate them from kirana owners, a limitation returned to in Section 4.

The policy landscape was built gradually. Demonetization in 2016 led to an acute cash crunch that, as evidenced by Crouzet et al. (2023), translated into sustained adoption by retail firms. The Goods and Services Tax reforms in 2017 created a need for maintaining records officially; Bhattacharjee et al. (2024) highlight demonetization and GST as the two major interventions that hastened digital adoption in Indian retail. Starting from 1 January 2020, MDR on UPI and RuPay debit transactions became free while transactions through cards previously used to incur about 1 percent fee for retailers (All India Radio News, 2025). The incentive scheme of ₹1,500 crores introduced in 2024–25 offers rewards of

0.15 percent of P2M transactions worth up to ₹2,000 to micro merchants and promotes the use of applications like UPI 123PAY and UPI Lite in rural and semi-urban regions (Ministry of Finance, 2025). Based on press reports on the commissioned survey, the incentives were disbursed in the amount of ₹1,389 crore in FY 2021–22, ₹2,210 crore in FY 2022–23, ₹3,631 crore in FY 2023–24 and ₹1,046 crore in FY 2024–25 against budget allocation of ₹8,276 crore (Statesman News Service, 2026).

The zero-MDR policy has not gone without challenge. In March 2025, a trade organization, the Payments Council of India, sent a letter to the government demanding reconsideration on the grounds of economic viability; and in June 2025, the Finance Ministry rejected claims about an upcoming MDR policy as unsubstantiated (All India Radio News, 2025). This changed in September 2026. As articulated by NPCI's FAQs on 15 September 2026, the structure for the 0.4 percent MDR on certain P2M transactions over ₹2,000 would apply from 15 October 2026, with a cap of ₹300 for transactions over ₹75,000. Consumers will not be charged, P2P transactions will continue to remain free, and small merchants getting transactions worth up to ₹1 lakh per month via UPI QR codes will also be exempted (SCC Online Blog, 2026). According to press reports, the Finance Ministry estimates that about 96 percent of P2M transactions will remain unaffected (Indyaspeak, 2026). For the present analysis, what matters is the shift from a flat to a tiered cost structure.

6. Analysis I: UPI as a Transaction-Cost-Reducing Technology

Taking the first question first, this section runs the four cost groups of Section 2.1 against the evidence, saying where it is strong and where it is thin.

6.1 Handling and security

Handling is by far the easiest savings category to construct. A QR code and a mobile phone substitute for the change-making and counting of notes that handling involves, with low marginal costs: Most kirana shopkeepers in the Bhattacharjee et al. (2024) survey (87 percent) said they used free mobile fintech platforms, and cost considerations were a key factor behind their intentions to go digital. UPI has also been less expensive for merchants than the card system before 2020 under zero MDR (All India Radio News, 2025). There is another reason to expect that cost savings will be disproportionately in small-ticket transactions. It takes as much effort to handle a note whether it is for tea or a TV, so that the cost per rupee handled is highest when the transaction is smallest. This follows the logic of the cost structure, but it is consistent with the government's decision to use incentives only for small-ticket payments up to ₹2,000 (Ministry of Finance, 2025).

Security is more elusive. Fewer notes on the shop premises will reduce risks of theft and of receiving counterfeit notes, but there is little evidence on merchant-level security problems. What is shown by the literature is that there is another type of risk that comes into play. The research conducted by Patil et al. (2020), who discovered the significance of trust and grievances for the acceptance of mobile payments in India, proves that merchants compare risks of having cash and of failed or disputed payments.

6.2 Reconciliation and records

This is where there is stronger evidence. According to a commissioned study carried out in February 2026, 72 percent of small merchants were satisfied due to the reason of fast transactions, good record keeping and operational convenience (Statesman News Service, 2026). Digital payments are a source of information creation by-product, and the information itself is what the cost of reconciliation was trying to buy. Adhikary et al. (2021) associate the use of digital payment technology with retail performance, which does not necessarily have to be associated with cost of reconciliation only.

6.3 Information costs and access to credit

The information case works as follows. Any merchant who uses UPI as an interface for its sales ends up creating a trail of verifiable information, and this trail may help in lowering the cost of being verified as creditworthy to a potential lender. The case is reasonable and has been stated often in industry commentaries, but evidence at the merchant level to support the claim that history of UPI use helps in gaining access to credit is weak in literature used for this paper and is left as a hypothesis.

6.4 What the cost lens explains and what it does not

The cost explanation accounts for persistence despite the demonetization shock, as the usage rate would go down once the note returns, according to Crouzet et al. (2023), had the technology merely assisted during the cash crunch; in fact, one would expect usage to persist if switching had saved money and produced externalities such that each new adopter added value to others. The cost perspective also helps understand why policy makers' focus has been on small ticket payments. One thing that the cost perspective cannot explain is the cash-lite paradox discussed in Section 1, namely that if switching lowered the transaction costs for everyone involved, merchants would move all of their transactions on UPI, but despite a 94 percent adoption rate, there remains a 38 percent share of cash payments (Statesman News Service, 2026). Resolving this requires conditions-side explanation introduced below.

6.5 Zero for the merchant is not zero for the system

There is one more important point about transaction costs that is often overlooked by the merchant literature: transaction costs do not disappear even when merchants pay nothing. They simply get transferred from the merchant to the payment system and then on banks, processors and customers through incentives. The allocation is reflected in the ₹1,500 crore program for FY 2024-25 and the disbursement figures for the previous years (Ministry of Finance, 2025; Statesman News Service, 2026), while the zero MDR argument of the industry (All India Radio News, 2025) is simply the same idea from the other side of the account sheet.

This is relevant for interpreting the data. In Sections 6.1 to 6.3, the savings by the merchant were partially an interlocutory act that was made possible through other funding sources, and any systemic analysis should consider how long it could be sustained that way. The 2026 framework may be considered a partial answer: it recreates a price for certain transactions but protects small merchants. Whether this new dynamic maintains the system adoption both in protected merchants and those paying now is the empirical task of Section 8.

7. Analysis II: Adoption, Continuance and Barriers

The second question is regarding why certain merchants are able to realize the saving while other merchants are not able to realize the saving. In Table 1, the data on merchants are compared against the UTAUT constructs along with an experience and continuance construct.

Table 1. Merchant-side evidence mapped to UTAUT constructs and the cost lens

Construct	Merchant-side evidence reviewed	Reading through the cost lens
Performance expectancy	Performance expectancy The biggest impact was made by perceived usefulness and compatibility in the intention of kirana owners to digitalise (Bhattacharjee et al., 2024); the use	Usefulness is largely the realised saving in handling and reconciliation costs.

Construct	Merchant-side evidence reviewed	Reading through the cost lens
	of digital payments is associated with good performance of the retailers (Adhikary et al., 2021); the factors that make retailers satisfied include fastness and record keeping (Statesman News Service, 2026). Usefulness mainly means the saved costs of handling and reconciliation.	
Effort expectancy	The perception of ease of use had a strong influence on digitalization intention (Bhattacharjee et al., 2024), which is one of the variables influencing small businesses in Jaipur according to Ligon et al. (2019), as described by Padma Kiran & Sailaja (2025).	Ease of use lowers the learning cost of switching, which matters most for first-time, low-literacy merchants.
Social influence	The use of mobile money spread to adjacent companies through demonetisation (Crouzet et al., 2023); customer demand is a cited factor behind merchant adoption (Ligon et al., 2019, summarized by Padma Kiran & Sailaja, 2025).	A network externality: accepting UPI is worth more the more customers already pay with it.
Facilitating conditions	A bank account, smartphone, internet access and technological literacy are prerequisites (Ligon et al., 2019, as summarised by Padma Kiran & Sailaja, 2025); trust and grievance redressal shape mobile-payment adoption in India (Patil et al., 2020).	Enabling conditions decide whether the saving is reachable at all; redressal governs the residual risk of failed or fraudulent payments.
Price value (cost)	Having a bank account, smartphone, internet connection, and knowledge about technology is mandatory (Ligon et al., 2019; summarized in Padma Kiran & Sailaja, 2025); whereas trust and grievance resolution affect the use of mobile payment in India (Patil et al., 2020).	The channel through which MDR enters the merchant's decision; zero MDR has kept it favourable.
Experience and continuance	Repeat usage by micro entrepreneurs and firms has been analyzed from the perspective of entrepreneurship and UTAUT2 theory (Pal et al., 2023; Tang & Tsai, 2024); experience affects the behavioral intention of merchants (Sinha & Singh, 2023).	Savings must survive the novelty period; a change in fees can alter the calculation after adoption.

Three trends can be seen from the table. Firstly, performance and effort expectancy, which are the most similar to the cost account, are always found valid: the merchants adopt if there is a saving and if it is

convenient. Secondly, the facilitating conditions are the gatekeeper here. A merchant who does not have an account in the bank, a smartphone, internet connection, and even elementary literacy cannot realize any saving no matter how much in principle he/she will get from it (Ligon et al., 2019, as summarized by Padma Kiran & Sailaja, 2025). This explains the presence of a long tail of non-adopters inside a headline adoption rate. The third trend is related to the social influence which works on two levels. It works because the customer demand forces the merchant to accept the UPI payments, and the presence of adopting neighbors adds value to accepting it (Crouzet et al., 2023).

Continuance merits discussion here since that's where I think the cash-lite conundrum exists. The literature on why microentrepreneurs and enterprises continue using mobile payments (Pal et al., 2023; Tang & Tsai, 2024) and on how experience influences merchants' intentions (Sinha & Singh, 2023) suggests that first use can be easily induced, while continued use relies on whatever transpires afterwards – whether settlements are received timely and disputes sorted out; whether customers actually do use mobile payments. For example, an entrepreneur who has had a payment hang in the balance will have a logical reason for choosing cash over mobile payment at the next juncture. Consequently, trust and dispute redressal mechanisms, found important for mobile payment adoption in India by Patil et al. (2020), will probably matter more for the depth of use than the initial adoption itself.

The barriers identified in the literature are uniform. Padma Kiran and Sailaja (2025), building on previous research, mention insufficient internet infrastructure, technical problems, digital illiteracy, lack of awareness, complexity of operations and issues of trust and privacy, and state that adoption was far from being a complete success since some customers preferred cash. Two factors need mentioning specifically. However, since these constraints are mostly conditions and not fees, reducing transaction fees does not alleviate much of them. And the final one is a customer-side issue: a merchant cannot be cashless when his customers come in carrying notes, thus another reason why depth is a function of the network rather than just the merchant.

Merchant heterogeneity is likely an important factor as well, although there is little evidence on it. A street vendor using a single QR code and a kirana store owner purchasing inventory on credit face very different sets of costs and constraints, and the constructs in Table 1 are unlikely to mean the same thing for both merchants. Very few studies reviewed in this paper actually provide any disaggregated results by merchant type, size or industry, which explains the termination of the analysis at the general level.

Finally, consumer-based evidence must be used with caution when it comes to the merchant group. Padma Kiran and Sailaja (2025) found that age and occupation were moderators of the relationship between performance expectancy and intention in UPI usage among consumers, but gender and income were not. These are consumer-based results. The question whether the same moderators play a role in the case of merchants remains open.

8. Discussion: The 2026 MDR Reform as a Test

This theoretical construct also leads to a hypothesis concerning the impact of the reform on the behavior of micro-merchants. Since the attraction of the UPI system for merchants can be based on lower costs, then the change in fees of those merchants which apply to merchants whose fees are paid will have the greatest effect. Such an assumption can be empirically tested through the very design of the reform, since the reform has a clearly defined border, namely, payments up to ₹2,000 and small merchants who receive funds via UPI QR code amounts up to ₹1 lakh a month are exempt, whereas other merchant payments are subject to a 0.4 percent fee (SCC Online Blog, 2026). Four hypotheses can be formulated.

Hypothesis 1. Micro-merchants within the exemption will keep using UPI and increase its usage due to the unchanged price attractiveness and costs savings. The evidence for such hypothesis is possible to obtain through transaction counts of different merchant categories before and after 15 October 2026.

Proposition 2. Non-exempt merchants with a usual ticket of more than ₹2,000 will have relatively lower growth in the share of UPI in the high-ticket space compared to exempt merchants. The rationale here is price value: 0.4 percent is far less than the 1 percent that card acceptance had traditionally cost (All India Radio News, 2025), but it is no longer zero, and if a merchant pays it, he will be motivated to compare UPI with cash and other payment systems.

Proposition 3. Given that thresholds create discontinuities, behavior tends to cluster around them. Merchants and consumers can break up or reorganize payments to keep them at or below ₹2,000 if the definitions in the framework support this possibility. Whether they do so, and whether they are even permitted to, is an empirical and regulatory question that the published framework alone does not answer.

Proposition 4. Since adoption has externalities (Crouzet et al., 2023), any retreat of mid-sized merchants would hurt UPI's positive effects for neighboring exempt merchants, since these merchants rely on consumers who come in the habit of paying with digital money. In that case, the reform would still have an effect on the exempt merchants, despite their fee staying the same, with its impact being highest in dense local markets where merchants of various sizes operate in close proximity to each other.

It would be wrong to interpret all of the changes occurring after 15 October as the merchant's reaction to the fee. Other reasons should be taken into account and considered in the experiment. Retail sales seasonality, changes in the UPI app functionality, customers' preferences changes, and regulatory changes happening simultaneously might affect merchant behaviour irrespective of the fee. Therefore, the design of a credible experiment should involve comparing the behaviour of the merchants just above and below the exemption threshold, taking into account merchant type and location, as well as splitting the announcement date and effective date of the new rule.

Some practical recommendations arise from this analysis. From the point of view of policy, the design seems to make sense as it keeps the cost advantage in the cases when the cost advantage logic predicts it, namely at the low-end ticket size and low-end merchant size. It is the Finance Ministry's position that category of merchant is what determines qualification, and not individual transactions of over ₹2,000, as per news reports, placing emphasis on communication and proper categorization by acquiring banks. With facilitative factors serving as the gate (Section 7), it seems that further investment in terms of literacy, connectivity, and grievance redressal would result in greater use intensity compared to price inducements alone. Merchants need to determine their own category, while ensuring that their reconciliation processes are revised in order to prevent the deduction of MDR from being seen as an error. As far as researchers are concerned, they require data that segregates exempt merchants from those that are not, the proportion of cashless transaction sales, and data pertaining to the same set of merchants over time.

9. Conclusion

The above research was focused on understanding the implications of UPI on the cost of doing business for small firms as well as what factors determine adoption of the system and continued usage among small merchants. Under the framework of transaction cost economics, it is fair to say that the greatest value of UPI comes through as a decrease in costs related to handling, securing, reconciliation, and

informational transactions associated with small ticket payments through the application of zero MDR policy and incentives. In terms of UTAUT framework, realization of those savings is possible depending on perceptions of usefulness and ease of use, facilitation conditions acting as gate, price value, and network effects between merchants and consumers.

Cash-lite conundrum, whereby universal adoption by merchants runs alongside widespread usage of cash transactions, is the key unexplained observation in the paper. The sources cited above indicate that continuance, trust and grievance resolution are more likely than adoption itself, to provide answers to this question; however, since no one studies the extent of sales going cash-lite, this hypothesis remains to be tested.

The 2026 MDR mechanism, if implemented according to the official plan, will be a unique opportunity to empirically test the cost argument, since some merchants pay fees for the services under established rules and others do not. Propositions 1 through 4 in Section 8 are attempts to formulate this hypothesis. The limitations of this study are equally clear. This is a secondary source analysis, it is based on policy stance as of 28 September 2026, and relies on the samples of metropolitan cities or consumer-oriented nature. The further steps include surveying merchants in all city types and industries, obtaining transaction data from NPCI or acquiring banks and tracking merchants' activities pre- and post-15 October 2026.

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