

Adoption of Cashless Payments by Small Retailers in Pune City: An Empirical Study

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Abstract: The demonetization of 500- and 1000- rupees' currency notes by the Government of India in November 2016 was argued to be a drive towards cashless Economy, for curbing corruption. This sudden removal of currency and the time taken to introduce new currency created a temporary cash crunch and prompted the consumers and sellers to look for alternative modes of payment. The small (unorganized) retailers were particularly affected by this phenomenon. This gave rise to evolution of cashless options such as POS (point of sale) machines for card payments and several mobile applications. The wide spread availability of mobile phones in the country and cheap data packages further increased the popularity of cashless transactions among customers and small retailers, who also saw this as a useful tool for retaining their customers. Several studies have indicated acceptance and a steady growth of cashless payments among retailers in India over the last three years. The current study aimed at capturing the current status of adoption of cashless payments in Pune city. It was observed that around 85% small retailers allow cashless payments in their shops. Also, cashless payments are estimated to contribute around 45% of the turnover of those retailers who accept them. Mobile applications are currently contributing to 48% of total cashless payments at retail shops in Pune city.

Keywords: demonetization, cashless payments, small retailers, Pune city

I. INTRODUCTION

The Government of India announced demonetization of all 500 and 2000 rupees' currency notes on 8th November 2016. The Government claimed that the action would curtail the shadow economy and reduce the use of illicit and counterfeit cash to fund illegal activity and terrorism. This sudden removal of a large volume of currency from the economy and the time taken for introduction of new currency resulted in a cash crunch for some period. This compelled the people to explore cashless transaction options for their day to day purchases of goods and services. The Government had also been promoting increasing use of bank transactions for better accountability. While Internet Banking was already prevalent for payment of utility bills and large transactions, cash was required for small transactions typically occurring at retail shops. Initiatives like PMJDY (Pradhan Mantri Jan Dhan Yojana) allowing zero balance bank accounts especially for people from lower economic strata, promoting use of credit cards and debit cards were intended to facilitate cashless transactions at retail level. This impetus from the Government on cashless transactions prompted several IT companies to develop mobile applications. Paytm and BHIM Unified Payment Interface (UPI) were two such applications that came into the market during this period.

Since the end of year 2016, several cashless transaction options have been evolved and they are now widely being used in the market. The current study is aimed at understanding the extent to which cashless transactions are prevalent particularly at the level of small retailers, and to understand the relative preference of cashless transactions over the use of currency. It focuses on cashless transactions particularly carried out through credit/debit cards or mobile applications. Internet Banking is excluded from the scope. The study is to be carried out at different regions of Pune city.

Background and significance of the study

A report published by IIM Bangalore (2017) mentions that 63% retailers all over India are inclined to cashless transactions. A huge chunk of shop keepers (94%) have mobile phones, out of which 41% are smart phone users, which presents a great opportunity for cashless transactions. Also, 45% retailers are inclined to use POS machines. The study also revealed that 38% retailers were willing to pay a transaction charge in excess of 1%. About 76% consumers preferred using cash, but this number appeared to be reducing. Young consumers (up to age 30 years) had high access to smart phones and were displaying more inclination towards cashless transactions.

An article by Dheeraj Tiwari in Economic Times (2017) mentioned that while many banks had come up with their own payment Apps, they were falling short of being convenient, multifunctional and easy to use. As such there was a need for the banks to reorient their approach in order to increasing dominance of technology firms in providing applications for cashless transactions for which the demand was increasing.

Article published by IIM, Bangalore in the Digital Innovation Lab (2017) stressed the importance of understanding of cost of operations of a kirana store and developing a reference model around key financial and operational parameters that would enable kirana stores to transition from cash-based to a cashless model. The ongoing research study, funded by CDFI, had been focuses on analyzing the business model of a typical kirana

store and study the potential financial impact of introduction of new payment systems and inventory tracking systems at the retail level.

Chattopadhyay et al (2018) have described the serious impact of demonetization on Indian economy since it was 78% cash based at that time. While in the developed countries cash transactions form around 20-25% of total transactions, in developing countries this proportion is above 50%. The severe shortage of currency and the government's urge to refrain from cash based transactions created a crisis situation. This major transformation was even more challenging not only because of the large scale, but also required an attitudinal change among the retailers and consumers. The researchers have tried to examine and assess the willingness to adopt cashless transactions and the extent of adoption and their openness to adapt to the new system. The study was conducted in Bareilly city with a sample size of 120. The researchers observed that while there was almost 80% awareness among retailers about the cashless options, they had equal inclination towards adoption of cashless options vis a vis cash transaction.

Patil and Bhujbal (2018) studied the impact of cashless transactions on retail business merchants in Latur city in Maharashtra. The study revealed that cashless transactions were not preferred by retail merchants because of high costs and security concerns.

Renita D'Souza (2018) pointed out several obstacles in digitization of Indian economy. Some of the major hurdles are poor income levels of almost 84% of the population and lack of education among these groups. The author raised doubts about the inability of unorganized retail sector to adopt technology driven cashless transaction options.

Sundararajan (2018), however, made a comparison of benefits and drawbacks of various payment modes to the customer and merchant and he observed that increased broadband and smartphone penetration in India due to availability of low-cost smartphones and affordable data plans would boost the adoption of digital payments. He also mentioned that NITI (National Institution for Transforming India) Aayog has reported that digital payment volumes recorded a CAGR of 55% in 2016-17 as compared to 28% in 2015-16 as a result of the above phenomenon.

Article in Indian Express (2018) confirmed the above observation with the fact that digital transactions in retail sector saw a jump of 64% in 2017-18 as compared to 2015-16. According to data sourced from the Reserve Bank of India (RBI) monthly bulletins, the volume of mobile banking transactions has grown by 380 per cent to 1.87 billion in 2017-18 from 389.49 million in 2015-16. The value of these transactions too has grown from Rs 4 lakh crore to Rs 14.7lakh crore in 2017-18.

While cashless payments have been picking up momentum during the years 2017-18, an article published in livemint.com (2019) has painted a very optimistic picture about India's move towards cashless economy. Growing use of smartphones and steep decline in data costs have helped cashless economy to grow immensely, from nothing to 800 million monthly transactions. Several companies are offering UPI services, and according to the article, Google is expected to lead in this domain.

The above literature indicates a rising acceptance of cashless transactions among the Indian consumers and merchants. Urban population from large cities like Pune is expected to have a high acceptance rate for cashless modes. Therefore, it is of interest to understand the level of adoption of cashless transactions in retail sector which contributes to a very large volume of transactions by people from all strata of the society. So far, no such study appears to have been made in Pune city, and hence this study assumes significant importance. The study focuses on small retailers i.e. unorganized retailers like grocery shops, pharmacies, auto mechanics etc.

Research Objectives

1. To estimate the percentage of small retailers who have adopted cashless transaction options.
2. To estimate the percentage of cashless transactions out of total transactions made at the retail shops.
3. To estimate the relative popularity of various Mobile Apps currently in use.
4. To estimate the proportion of card payments out of total cashless transactions.
5. To identify the major reasons for not using/being able to use cashless transactions.
6. To estimate the increase/decrease in business on account of adoption of cashless transactions.

II. RESEARCH DESIGN AND METHODS

This study is a cross sectional study primarily aimed at describing the extent to which cashless payments are adopted by unorganized retail sector in Pune city and the relative preference of various cashless options such as credit/debit cards and mobile applications. The study also tries to identify the reasons for non-adoption of cashless payments.

Population and Study Sample

The study has covered various categories of small retailers in Pune city. Based on a pilot study, minimum sample size of 400 is decided, considering 50% prevalence of cashless transactions in the market, with 5% permissible error and 95% confidence level. The retailers were randomly chosen from different regions of Pune city.

Following categories of retailers were studied:

1. Grocery shops (Kirana)
2. Vegetable or meat vendors
3. Pharmacies
4. Auto mechanic shop
5. Sweet shop or Bakery
6. Street food joints
7. Hardware or Furniture stores
8. Restaurant or Liquor shops
9. Stationery and Variety store, Utensils stores
10. Mobile repair shops or Electronics shops
11. Garment shops
12. Tailors
13. Hair dressers or Beauty parlour, Jewellers
14. Sports shop or Shoe shop
15. Miscellaneous other shops

Stratified random sampling was used for collection of study samples from following regions of Pune city, to ensure comprehensive geographic coverage:

1. Deccan Gymkhana: includes part of Karve Road, Fergusson Road and Jangli Maharaj Road
2. Kothrud: includes Kothrud depot, Paud Phata, Kothrud Stand, Dahanukar Colony, part of Warje
3. Nalstop, Law college Road, Karve road up to Deccan
4. Pune Station and Camp: includes part of Rasta peth, MG Road
5. Model colony, Chatushrungi, SB Road
6. Bavdhan, Baner and Aundh
7. Swargate: includes Tilak Road, part of Bajirao Road
8. Lakshmi Road: includes part of Navi peth, Appa Balwant Chowk, Mandai area
9. Hadapsar
10. Sinhagad Road

Sources and collection of Data

Electronic survey was used to collect the responses from retailers, which is a primary data source. The research team members visited the retailers' shops and filled up the electronic form by soliciting retailers' responses through personal interaction. The responses to the questionnaire were collected in electronic spread sheet which, for analysis. Total 738 responses were collected from all over Pune city. After dropping incomplete or duplicate records 731 valid responses were considered for further analysis.

III. DATA ANALYSIS AND DISCUSSION

The distribution of respondents across various regions of Pune city is shown in Table 1 below.

Table 1 – Pune City Region wise distribution of responses

Pune City Region	No. of responses
Bavdhan, Baner and Aundh	98
Deccan Gymkhana: includes part of Karve Road, Fergusson Road and Jangli Maharaj Road	89
Hadapsar and near abouts	97
Kothrud: includes Kothrud depot, Paud Phata, Kothrud Stand, Dahanukar Colony, part of Warje	84
Lakshmi Road: includes part of Navi peth, Appa Balwant Chowk, Mandai area	38
Model colony, Chatushrungi, Senapati Bapat Road	115
Nalstop, Law college Road, Karve road up to Deccan Gymkhana	42
Pune Station and Camp: includes part of Rasta peth, MG Road	54

Sinhagad Road	55
Swargate: includes Tilak Road, part of Bajirao Road	59
Total responses	731

It may be observed that the samples are fairly uniformly distributed across the Pune city. Type wise distribution of the retailers is presented in Table 2 below.

Table 2 - Retailer type wise distribution of responses

Type of Retailer	Count
Automobile Mechanic	19
Garments shop	71
Hair dressers or beauty parlour or Jeweller	29
Hardware, Electricals or Furniture shops	38
Kirana shop (Groceries)	64
Miscellaneous other shops	79
Mobile repairs or Electronics shop	40
Pharmacy	49
Restaurant	84
Sports shop or Shoe shop	25
Stationary, Gifts or Variety Store, Utensils stores	78
Street food joint	88
Sweet Shop or Bakery	43
Tailors	12
Vegetable or meat vendor	12
Total	731

As seen in table 2, a fair distribution of retailers is achieved across various types.

The study sample showed a considerable level of adoption of cashless payments among the small retailers (see Table 3 below).

Table 3 – Adoption of cashless payments

Whether cashless payments are accepted	Count	%
No	112	15.3%
Yes	619	84.7%
Total	731	100.0%

It is observed that 85% of the respondents were allowing cashless mode of payments to their customers. This also indicates that at 95% significance level, the percentage of small retailers in Pune who allow cashless payments lies between 82% to 87% ($\alpha=5\%$). This is a significant increase in cashless transactions from almost zero in December 2016, post demonetization. It is also quite high as compared to the national average of 63% mentioned in the survey of IIM Bangalore (2017).

Contribution of cashless payments in total transactions

Among the 619 retailers who allowed cashless transactions, 580 retailers responded to the question – “What percentage of total payments are made through cashless methods which include credit cards, debit cards or Mobile Apps?”. Analysis of responses revealed that 45.3% of the total payments are made through cashless means. Based on this data it may also be concluded that the percentage of cashless payments occurring in Pune city is between 41% and 49% ($\alpha=5\%$). This again indicates that there is increasing preference of cashless transactions by retailers and their customers.

The role of Mobile Apps in cashless payments

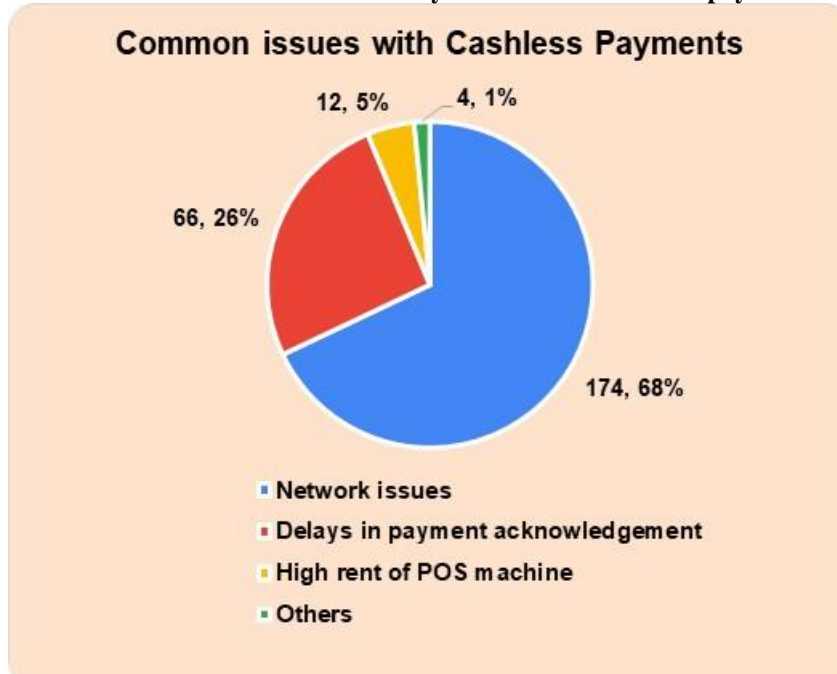
The 580 respondents mentioned above were also asked the question “What percentage of total cashless payments are made through Mobile Apps”. This question assumes significance due to the ease of use of Mobile Apps since they do not need the retailers to maintain a Point Of Sale (POS) machine for card payments. The increasing use of Smartphones and availability of cheap data packs makes this a convenient option. The analysis revealed that on average 48.3% of cashless transactions are carried out through Mobile Apps. This also indicates that the percentage of cashless payments carried out in Pune city through Mobile Apps is between 44% and 52% ($\alpha=5\%$). This also presents an encouraging picture for the Digital India campaign of the Government of India. It may be interesting to observe retailer type wise acceptance of cashless payment mode. The data is presented in Table 4 below.

Table 4 – Retailer type wise acceptance percentage of cashless payments

Type of Retailer	Cashless payments not accepted	Cashless payments accepted	Total	Not accepted (%)	Accepted (%)
Automobile Mechanic	5	14	19	26.3%	73.7%
Garments shop	8	63	71	11.3%	88.7%
Hair dressers or beauty parlour or Jeweller	1	28	29	3.4%	96.6%
Hardware, Electricals or Furniture shops	15	23	38	39.5%	60.5%
Kirana shop (Groceries)	17	47	64	26.6%	73.4%
Mobile repairs or Electronics shop	2	38	40	5.0%	95.0%
Pharmacy	3	46	49	6.1%	93.9%
Restaurant	5	79	84	6.0%	94.0%
Sports shop or Shoe shop	3	22	25	12.0%	88.0%
Stationary, Gifts or Variety Store, Utensils stores	9	69	78	11.5%	88.5%
Street food joint	17	71	88	19.3%	80.7%
Sweet Shop or Bakery	3	40	43	7.0%	93.0%
Tailors	8	4	12	66.7%	33.3%
Vegetable or meat vendor	4	8	12	33.3%	66.7%
Miscellaneous other shops	12	67	79	15.2%	84.8%
Grand Total	112	619	731	15.3%	84.7%

It may be observed that the acceptance of cashless payments mostly varies from 60% to 95%, across all categories of small retailers. Despite the wide adoption of cashless payment options, the retailers face certain issues with them. The common issues reported by 256 respondents are presented below.

Chart 1 – Common issues faced by retailers with cashless payments



It is seen that mobile network connectivity is the biggest issue, followed by delays in getting payment acknowledgement from the Bank servers. However, with the ongoing investments and improvements in infrastructure, these issues may reduce eventually.

Availability of Mobile Apps

Wide availability of Smartphones and cheaper internet data packs, Mobile Apps seem to be becoming increasing popular as a preferred tool for cashless payments. The study revealed that the following 4 Mobile

Apps are now widely available in retail stores. This is based on the responses of 580 retailers who allow cashless payments.

Table 5 – Availability of Mobile Apps at small retail outlets

Mobile App	Available	Not available	Availability %
Paytm	442	138	76.2%
BHIM UPI	417	163	71.9%
GooglePay	386	194	66.6%
PhonePe	443	137	76.4%

It appears that Paytm which was introduced in the market towards the beginning of year 2017 still seems to be preferred option of retailers and their customers, however, other products are also not very far behind in the competition.

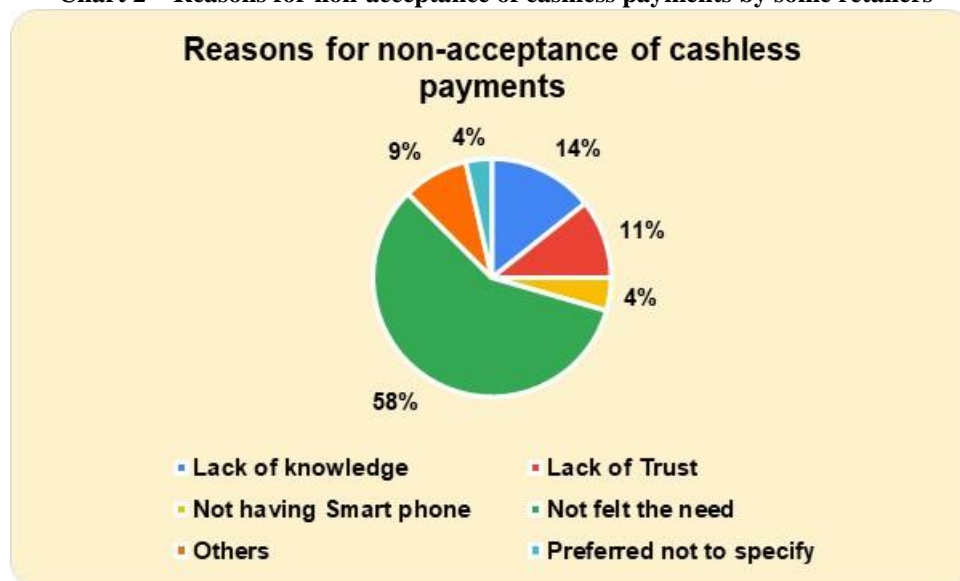
Perceived impact of cashless transactions on Retail business

The study also tried to understand the underlying impetus on the retailers for adoption cashless payments. The initial cash crunch due to demonetization might have resulted in customers to prefer those retailers who allowed non-cash payment options. This might have resulted in loss of business in some cases where the retailer did not offer cashless payment options. In order to assess this phenomenon, the retailers were asked about their perception of increase in business after adoption of cashless payments as compared to the earlier scenario. Responses from 455 retailers indicated a 7.73% rise in the business due to adoption of cashless payments. At 95% confidence level, this would mean that allowing cashless payment has resulted in 5% to 10% rise in businesses of small retailers in overall Pune city. This should explain the quick proliferation of cashless payments among the retailers.

Reasons for non-acceptance of cashless payments

While a majority of retailers have welcomed cashless payments, there are still some issues in going towards 100% adoption. There were 112 respondents who were not yet offering cashless payment options to their customers. The major reasons of non-acceptance of cashless transactions are observed to be the following:

Chart 2 – Reasons for non-acceptance of cashless payments by some retailers



It was observed that 58% retailers did not still feel the need for cashless payment options. Lack of technical knowledge (14% cases) and lack of Trust in the new technologies (11% cases) are the next two important reasons for non-acceptance of cashless options. It might be interesting to see how these perceptions change with increasing awareness and pressure from customers for these convenient payment options.

IV. CONCLUSION

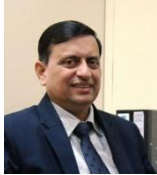
In congruence with previously reported studies, the current study also indicated a significantly high level of acceptance of cashless payments among small retailers in Pune city. It could be concluded from the study that 82% to 87% small retailers in Pune city are allowing cashless payment options to their customers now, though they still sometimes face issues like mobile network connectivity or delays in payment acknowledgement from banks. It is also estimated that 41% to 47% of transactions are carried out through cashless means. Use of Mobile Apps is currently in the range of 44% to 52% of the cashless transactions, however they may become increasingly popular as compared to POS machines because some issues like high rent payable for their usage. Acceptance of cashless payments also seem to have resulted in 5% to 10% increase

the business of those retailers who started accepting these modes of payment. There still seem to be 13% to 18% retailers who have refrained from allowing cashless payment options to their customers. The major reasons for such non-acceptance are – not feeling the need, lack of knowledge and lack of trust in these new technologies. However, it may be concluded that at least in a Metro city like Pune, a positive outlook is seen at the level of small retailers towards cashless economy.

V. REFERENCES

- [1] Indian Institute of Management, Bangalore (2017). *Going Cashless: Kirana stores & small retailers hold key, says new report based on research by IIMB and CDFI*. Retrieved from <https://www.iimb.ac.in/node/4705>
- [2] Tiwari, Dheeraj (2017). *Both consumers and retailers are open to cashless now: Report*. *Economic Times, ET Bureau*, November 21, 2017. Retrieved from <https://economictimes.indiatimes.com/news/economy/finance/both-indian-consumers-and-retailers-more-open-to-cashless-now-report/articleshow/61740348.cms?from=mdr>
- [3] Indian Institute of Management, Bangalore (2017). *Facilitators of cashless transactions in unorganized retail supply chains with specific focus on Convenience (kirana) stores*. *Digital Innovation Lab 2017*. Retrieved from http://dilab-iimb.in/our-work/cashless_transaction_kirana
- [4] Chattopadhyay, Subho, Gulati, Payal, Bose, Indranil. (2018). *Awareness and Participation of Small Retail Businesses in Cashless Transactions: An Empirical Study*. *Management Dynamics in the Knowledge Economy*, Vol.6 (2018) no.2, pp.209-225; DOI 10.25019/MDKE/6.2.02. Retrieved from <https://ideas.repec.org/a/nup/jrmdke/v6y2018i2209-225.html>
- [5] Dr. Patil, Hanumanth, S., Bhujbal, Sonali, P. (2018). *Impact of Cashless Transactions on Retail Business Merchants in Latur City*. *International Journal of Business, Economics, and Commerce*, ISSN 2250-057X, Vol.8, Issue 3, March 2018, pp. 71-77. Retrieved from https://www.academia.edu/37452804/Impact_of_Cashless_Transactions_on_Retail_Business_Merchants_in_Latur_City
- [6] D'Souza, Renita. (2018). *Two years after demonetization: Cashless India still a distant dream*. *Orfonline.org, India matters*, November 2018. Retrieved from <https://www.orfonline.org/expert-speak/two-years-after-demonetisation-cashless-india-still-a-distant-dream-45682/>
- [7] Sundararajan, S. (2018). *Cashless In-Store Payments and the Transformation of the Indian Retail Industry*. *dqindia.com*. Retrieved from <https://www.dqindia.com/cashless-store-payments-transformation-indian-retail-industry/>
- [8] Indian Express (2018). *Retail digital payments jump in FY18*. *indianexpress.com*. Retrieved from <https://indianexpress.com/article/business/banking-and-finance/retail-digital-payments-jump-in-fy18-5438401/>
- [9] Livemint. (2019). *Opinion | Cashless India could be a model for the world*. *Livemint.com*. Retrieved from <https://www.livemint.com/industry/banking/cashless-india-could-be-a-model-for-the-world-1559790271860.html>

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