

# IMPACT OF MOBILE PHONE PAYMENT TECHNOLOGY ON CUSTOMERS OF PHYSICAL RETAIL STORE

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## ABSTRACT

Mobile phone is an excellent tool of not just communication but also making online transaction such as shopping, banking, bill payment, ticket reservation etc. The lot of research has been done on role of Information Communication Technology (ICT) on digital payment for online shopping or ecommerce but very limited research has been done to know the preference of customers about digital payment using mobile phone when they visit retailer (**Brick and mortar business**) for buying any commodity or product in their daily life. Consumers love shopping online, sure—but they also love brick-and-mortar stores, for different reasons. The falling prices of mobile phones and internet data have enabled the common man to afford mobiles with internet connection. After demonetization in India (8 Nov 2016), Indian government aggressively promoted cashless transaction. The Vision is to provide facility of seamless digital payment to all citizens of India in a convenient, easy, affordable, quick and secured manner. In line with this vision, the government, banks and private bodies have developed digital wallets and payment apps through which user can make payment to the retailer at Point of Sale. This paper aims to know whether customers prefer to pay using cash or mobile when they visit the retail store for buying any commodity. This study is conducted in Nagpur city (Maharashtra State) India.

**Keywords:** Mobile Payment, Digital Wallets, Customer, brick-and-mortar stores.

## INTRODUCTION

Government of India is consistently making effort to transform India into a cashless economy to weed out black money and corruption from public life. The main advantages of cashless transactions seem that no fake money, traceability of transactions, enhance in tax revenue and reduction of money handling costs. On 8 November 2016, Modi Government in India announced the demonetisation of 500 and 1000 rupees notes. Thereafter, there was a sudden surge in digital payment system due to the scarcity of cash. In order to promote cashless transaction National Institution for Transforming India (NITI) Aayog leads initiative to convert 100% Government – Citizen Transactions to the digital platform.

In terms of mobile users in the world, India ranked 2<sup>nd</sup> after china. India's mobile phone subscriber base has reached the one billion users' mark, according to data released recently by the Telecom Regulatory Authority of India (TRAI), country's telecom regulator. In such a scenario mobile phone offers huge opportunity not only for communication but digital payment. Indian government, banks and private companies have already developed technologies and pave the way for digital payment. Digital payment can be made through debit card, credit card, computers having internet connection; mobile phones payment can be done using mobile apps and mobile wallet.

The National Payments Corporation of India (NPCI) developed BHIM (Bharat Interface for Money) app based on the Unified Payments Interface (UPI). On 14 april 2016 Prime Minister launched the BHIM-Aadhaar App in Nagpur on the occasion of the 126th birth anniversary of Dr. Bhim Rao Ambedkar. Another innovative payment service launched by NCPI is the \*99# service, which works on Unstructured Supplementary Service Data. This USSD service does not require internet connection provided that your bank account number must be linked with your mobile number. One more scheme for digital payment is AEPS (Aadhaar Enabled Payment System) is a bank led model which allows online interoperable financial transaction at PoS (Point of Sale / Micro ATM) through the Business Correspondent (BC)/Bank Mitra of any bank using the Aadhaar authentication.

### Mobile wallets / e-wallets

Mobile wallets are digital instruments where you can store money for instant payments. It is a way to carry cash in digital format. You load money by transferring from your bank account via credit/debit cards or net banking. After this, you can pay with your smartphone, tablet, or smart watch in order to make the purchase. Customer account is required to be linked to the digital wallet to load money in it. Almost all the prominent banks in India and some private companies are having their own e-wallets e.g. Paytm, Freecharge, Mobikwik, Oxigen, mRupee, Airtel Money, Jio Money, SBI Buddy, itz Cash, Citrus Pay, Vodafone M-Pesa, Axis Bank Lime, ICICI Pockets, SpeedPay etc. [1]

Unified Payment Interface (UPI), is an electronic funds transfer facility that enables all bank account holders to send and receive money from their smartphones without the need to enter bank account information or net banking user-id / password. This requires only the recipient's mobile number or Virtual Payment Address. Each Bank provides its own UPI App for Android, Windows and iOS mobile platform(s).

Most of the wallets available in India also allow making payments by entering credit/debit card information, i.e. without first adding money. This would be time consuming if you have to make payments often. UPI is faster, if you are not comfortable storing your money in a 3rd party app. [2]

### NFC Technology

Near field communication (NFC) is an innovative wireless communication technology that gives users the ability to exchange data between electronic devices such as smart phones. NFC is actually based on radio-frequency identification (RFID ) technology. RFID uses magnetic field induction to initiate communication between electronic devices in close vicinity. NFC technology made mobile payments an instant, secure process.

In India, Samsung Pay is one of the best apps for NFC payments. Apart from Samsung Pay, you will find Android Pay, Paytm (Taptopay) that are popular. There are banks like HDFC, ICICI and Axis bank, which are also providing NFC payment services through their banking app. Recently ICICI Bank introduces a new mobile payment solution 'Touch & Pay' in a Pockets app. 'Touch & Pay' feature simply lets you tap your smartphone that enables you to make secure contactless payments at retail stores using your smart phones NFC enabled merchant terminal and make the payment through your linked ICICI Bank Debit/Credit Card. [3]



Today there are many payment apps available in India those are provided by the third party, telephone industry, Banks and government. Some of the popular mobile payment apps are BHIM, paytm, mobikwik, mRupee, PhonePe, Citrus, Oxygen wallet, Itzcash, Google pay(tez), Airtel money, Jio money, SBI buddy, axis bank lime, HDFC payZapp etc.

### PROBLEM STATEMENT

The basic requirement for mobile payment is mobile / Smartphone device, bank account and internet connection. However, USSD service does not require internet connection but needs bank account. But the problem is that many adults do not have bank account and large number of adults does not have awareness about how to make mobile payment.

Recently World Bank revealed that India has 19 crore adults without a bank account despite the success of the ambitious "Jan Dhan Yojana", making it the world's second largest unbanked population after that of China. [4]

The adults who are having mobile device and bank account are also not making the frequent use of mobile payments and cash payment is still in trend in India. However, the trend of mobile payment increasing day by day specifically for online shopping but when compared to offline shopping in physical stores most of the customers make cash payment.

## RESEARCH OBJECTIVES

Despite the fact that promotion of digital payments has been given highest priority by the Government of India and the advantages of digital payment, physical cash transaction is in trend and even today most of the transactions are done in cash specifically when talking about purchases in physical retail stores.

In this paper, the researcher made an attempt to find out the answers of following questions –

1. Why the larger section of society not using their mobile phones for making payment despite the availability of mobiles and many mobile payment apps?
2. What are the different challenges faced by the public while doing mobile payment in physical retail stores?
3. What is the perception of people towards mobile payment in their daily life?
4. What measures should be taken by the government to enhance the adoption of mobile payment technology by the people.

## LIMITATIONS

1. The study conducted is mainly focus on use of mobile payment in physical store.
2. The sample size taken for the study is 99.
3. The sampling is restricted to Nagpur city only.

## LITERATURE REVIEW

The organized formal sector retailers / suppliers usually offer card based and mobile payment transaction facilities. The small retailers usually don't want a paper trail of revenue earned and don't want to pay a transaction fee. However some retailers who have card transaction facility often encourage consumers to pay in cash without a receipt by offering lower prices if they do so. This is the benefit they pass on to consumers, keeping for themselves the benefit of not paying a tax on their profit. [5]

While this is true that digital payment or cashless transaction increasing day by day, people also makes cash transaction on daily basis for retail shopping. The physical cash transaction is not obsolete completely and it exists there for some reasons. Even though people started making digital payments using mobile phones the significance of cash transaction is not came to an end. Even today physical cash payment is one of the most popular ways of doing retail transaction.

This article will review the role of mobile phones for making digital payment during retail shopping. In this paper, researcher tried to find out whether people prefer cash or cashless transaction for retail shopping such as grocery, daily needs, apparels, restaurants, utensils, stationary etc.

## RESEARCH DESIGN

It is an exploratory research. Exploratory research, as the name implies, intends merely to explore the research questions and does not intend to offer final and conclusive solutions to existing problems. Primary data is collected through questionnaire and secondary data collected from published journal and websites.

## SAMPLE

The study sample comprised of 99 people randomly selected from different walks of life who are resident of Nagpur city situated in Maharashtra. Using stratified random sampling method, the questionnaire was given to 61 male and 38 female. The age of respondents were 18 year and above.

## ANALYSIS & INTERPRETATION:

The tools used for analyzing are as follows: -

1. Percentage analysis
2. Ranking method

### 1. Percentage Analysis:

Comparison between series of data obtained from the respondents is made using percentage method. Since most of the data capture is of quantitative type, percentage

$$\text{Percentage} = \frac{\text{Number of respondents}}{\text{Total number of respondents}} \times 100$$

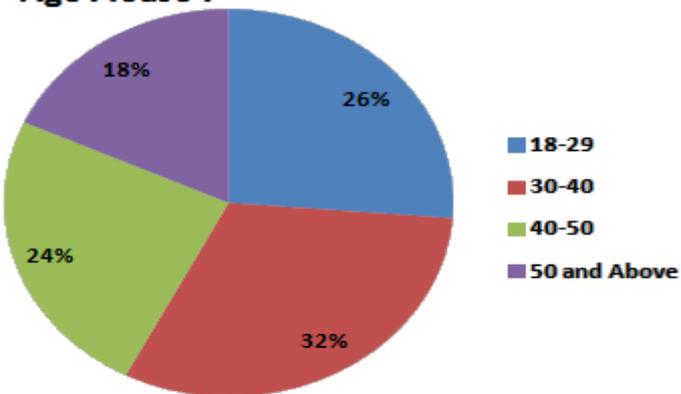
**2. Ranking Method:**

The ranking method was conducted to find out preference of customers about cash or cashless way of making payment during purchase in physical retail stores or micro-business operators.

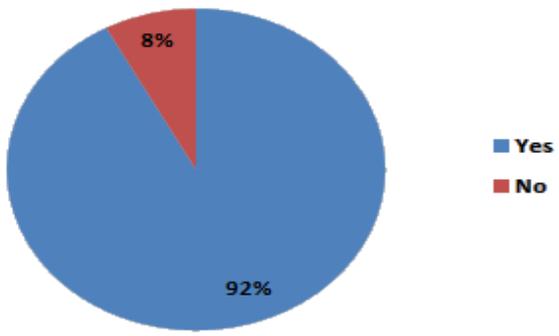
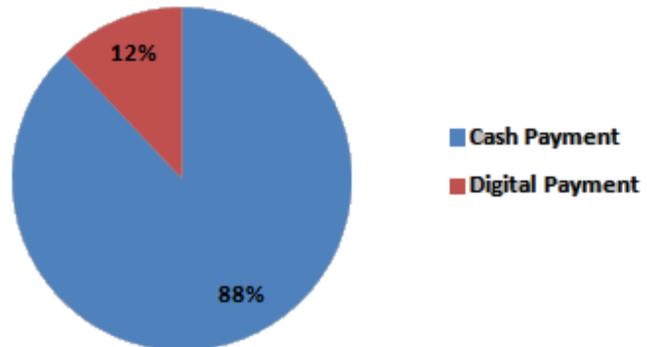
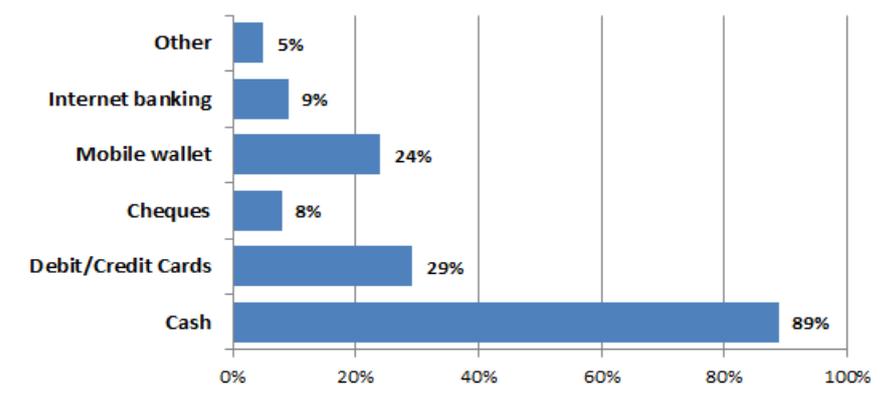
**TOOLS**

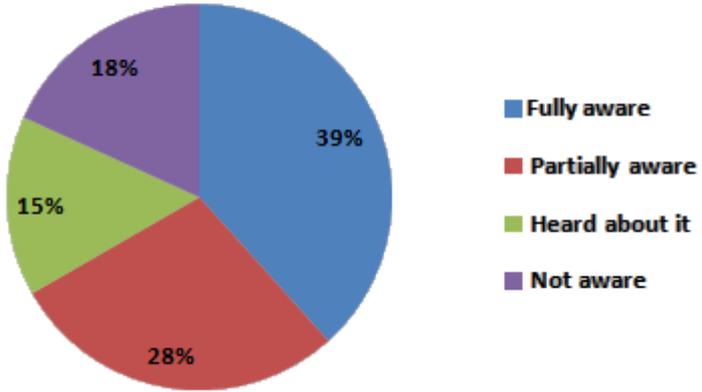
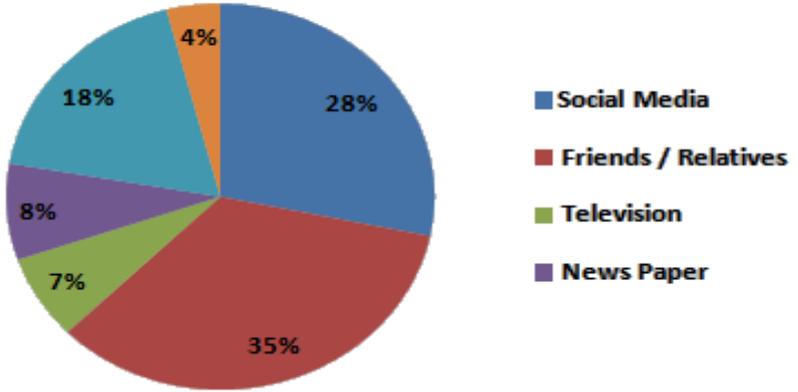
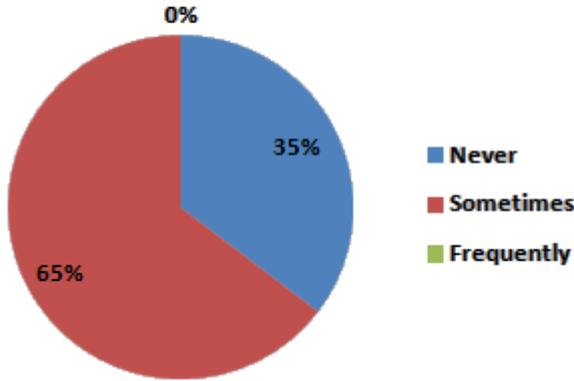
Questionnaires are one of the most efficient ways of data collection when the researcher knows exactly what is required and how to measure the variables of interest. The primary data collected for this research using online survey. A thoughtful questionnaire was prepared and given to the respondents. The questions incorporated into questionnaire were of quantitative nature as well as qualitative type.

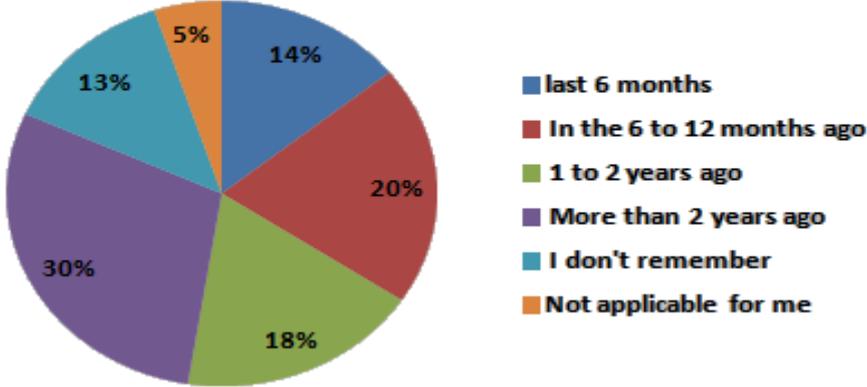
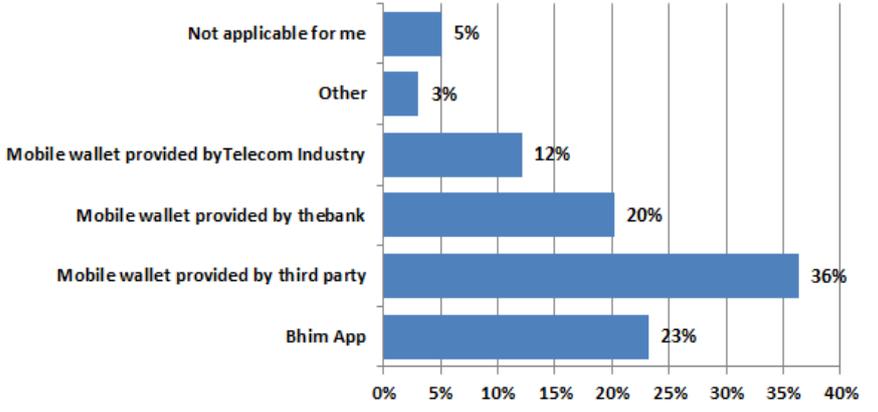
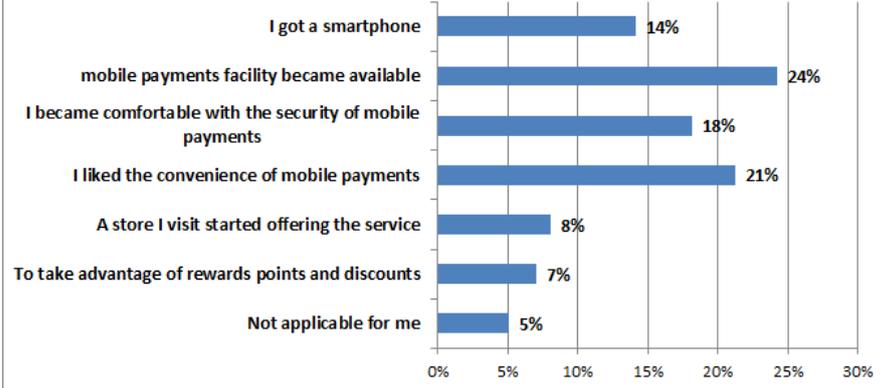
A questionnaire was framed consisting of 18 thoughtfully selected closed end questions and open end questions covering the personal and demographic profile. The data related to “Customer’s preference of making payment during purchase transactions in brick and mortar stores” were collected. Most of the questions designed in order to acquire the perception of people about why they prefer cash or cashless transactions. The various questions and their answers collected through questionnaire are depicted in following charts -

Question Number	Question and Chart												
1	<p style="text-align: center;"><b>Age Please ?</b></p>  <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="color: blue;">■</td> <td>18-29</td> <td>26%</td> </tr> <tr> <td style="color: red;">■</td> <td>30-40</td> <td>32%</td> </tr> <tr> <td style="color: green;">■</td> <td>40-50</td> <td>24%</td> </tr> <tr> <td style="color: purple;">■</td> <td>50 and Above</td> <td>18%</td> </tr> </table>	■	18-29	26%	■	30-40	32%	■	40-50	24%	■	50 and Above	18%
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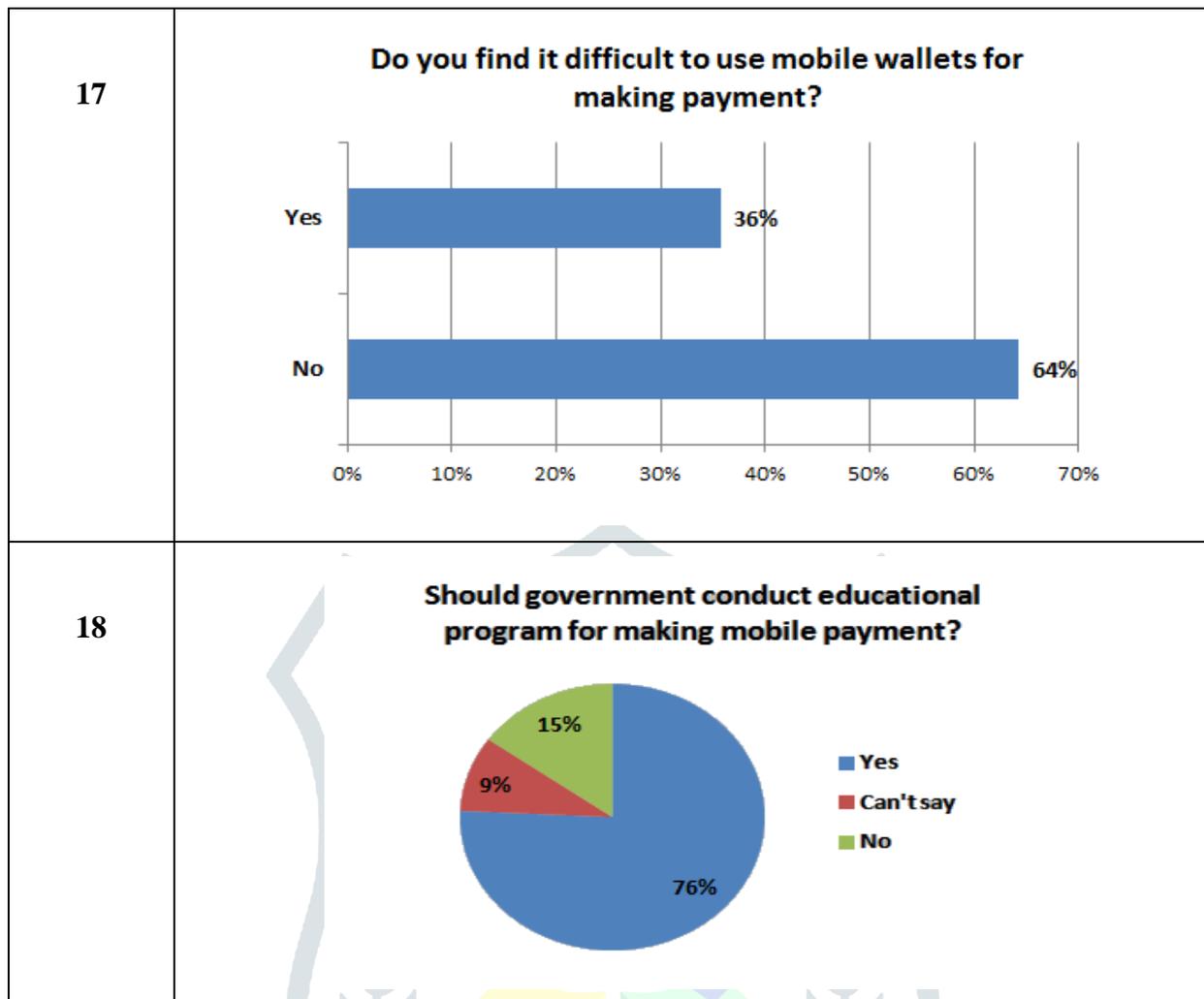
<p>2</p>	<p style="text-align: center;"><b>Gender ?</b></p> <p>A pie chart titled 'Gender ?' showing the distribution of respondents by gender. The chart is divided into two segments: a larger blue segment representing 'Male' at 62%, and a smaller red segment representing 'Female' at 38%. A legend to the right of the chart identifies the colors: blue for Male and red for Female.</p> <table border="1"> <thead> <tr> <th>Gender</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Male</td> <td>62%</td> </tr> <tr> <td>Female</td> <td>38%</td> </tr> </tbody> </table>	Gender	Percentage	Male	62%	Female	38%								
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<p>3</p>	<p style="text-align: center;"><b>How often do you use cash for purchasing product/commodity?</b></p> <p>A pie chart titled 'How often do you use cash for purchasing product/commodity?' showing the frequency of cash usage. The chart is divided into six segments: 'Everyday' (29%, blue), 'Three to six times a week' (14%, red), 'One to two times a week' (36%, green), 'Once a fortnight' (14%, purple), 'Once every few months' (7%, cyan), and 'I don't use cash' (0%, orange). A legend to the right of the chart identifies the colors for each frequency category.</p> <table border="1"> <thead> <tr> <th>Frequency</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Everyday</td> <td>29%</td> </tr> <tr> <td>Three to six times a week</td> <td>14%</td> </tr> <tr> <td>One to two times a week</td> <td>36%</td> </tr> <tr> <td>Once a fortnight</td> <td>14%</td> </tr> <tr> <td>Once every few months</td> <td>7%</td> </tr> <tr> <td>I don't use cash</td> <td>0%</td> </tr> </tbody> </table>	Frequency	Percentage	Everyday	29%	Three to six times a week	14%	One to two times a week	36%	Once a fortnight	14%	Once every few months	7%	I don't use cash	0%
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<p>4</p>	<p style="text-align: center;"><b>How often you visit to physical retail store to buy ?</b></p> <p>A pie chart titled 'How often you visit to physical retail store to buy ?' showing the frequency of visits to physical retail stores. The chart is divided into four segments: 'Frequently' (58%, blue), 'Rarely' (14%, red), 'Sometimes' (28%, green), and 'I don't visit the physical retail store' (0%, purple). A legend to the right of the chart identifies the colors for each visit frequency category.</p> <table border="1"> <thead> <tr> <th>Frequency</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Frequently</td> <td>58%</td> </tr> <tr> <td>Rarely</td> <td>14%</td> </tr> <tr> <td>Sometimes</td> <td>28%</td> </tr> <tr> <td>I don't visit the physical retail store</td> <td>0%</td> </tr> </tbody> </table>	Frequency	Percentage	Frequently	58%	Rarely	14%	Sometimes	28%	I don't visit the physical retail store	0%				
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<p>5</p>	<p style="text-align: center;"><b>Do you have bank account ?</b></p>  <p>A pie chart titled "Do you have bank account ?" showing two segments: a large blue segment representing "Yes" at 92% and a smaller red segment representing "No" at 8%. A legend to the right identifies the colors: blue for "Yes" and red for "No".</p> <table border="1"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>92%</td> </tr> <tr> <td>No</td> <td>8%</td> </tr> </tbody> </table>	Response	Percentage	Yes	92%	No	8%								
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<p>6</p>	<p style="text-align: center;"><b>For small transactions which of the following mode of payment you prefer</b></p>  <p>A pie chart titled "For small transactions which of the following mode of payment you prefer" showing two segments: a large blue segment representing "Cash Payment" at 88% and a smaller red segment representing "Digital Payment" at 12%. A legend to the right identifies the colors: blue for "Cash Payment" and red for "Digital Payment".</p> <table border="1"> <thead> <tr> <th>Mode of Payment</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Cash Payment</td> <td>88%</td> </tr> <tr> <td>Digital Payment</td> <td>12%</td> </tr> </tbody> </table>	Mode of Payment	Percentage	Cash Payment	88%	Digital Payment	12%								
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<p>7</p>	<p style="text-align: center;"><b>What is your go-to payment option when making purchases in physical store?</b></p>  <p>A horizontal bar chart titled "What is your go-to payment option when making purchases in physical store?" showing six categories. The x-axis represents percentages from 0% to 100%. The bars are blue and labeled with their respective percentages: Cash (89%), Debit/Credit Cards (29%), Mobile wallet (24%), Cheques (8%), Internet banking (9%), and Other (5%).</p> <table border="1"> <thead> <tr> <th>Payment Option</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Cash</td> <td>89%</td> </tr> <tr> <td>Debit/Credit Cards</td> <td>29%</td> </tr> <tr> <td>Mobile wallet</td> <td>24%</td> </tr> <tr> <td>Cheques</td> <td>8%</td> </tr> <tr> <td>Internet banking</td> <td>9%</td> </tr> <tr> <td>Other</td> <td>5%</td> </tr> </tbody> </table>	Payment Option	Percentage	Cash	89%	Debit/Credit Cards	29%	Mobile wallet	24%	Cheques	8%	Internet banking	9%	Other	5%
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<p>14</p>	<p style="text-align: center;"><b>What is/are your purpose(s) of using E-wallet?</b></p> <table border="1"> <thead> <tr> <th>Purpose</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Fund transfer</td> <td>40%</td> </tr> <tr> <td>Online Recharge of services</td> <td>47%</td> </tr> <tr> <td>Utility and bill payment</td> <td>53%</td> </tr> <tr> <td>Online shopping</td> <td>60%</td> </tr> <tr> <td>Making payment to physical stores</td> <td>13%</td> </tr> </tbody> </table>	Purpose	Percentage	Fund transfer	40%	Online Recharge of services	47%	Utility and bill payment	53%	Online shopping	60%	Making payment to physical stores	13%
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<p>15</p>	<p style="text-align: center;"><b>Please tell us what are the reasons for not adopting mobile payment?</b></p> <table border="1"> <thead> <tr> <th>Reason</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>I don't understand mobile payment options</td> <td>43%</td> </tr> <tr> <td>The places I shop don't accept mobile payments</td> <td>50%</td> </tr> <tr> <td>It's difficult to set up or use mobile payments</td> <td>57%</td> </tr> <tr> <td>Comfortable with cash transaction</td> <td>64%</td> </tr> <tr> <td>Mobile payments are NOT accepted in all physical stores</td> <td>14%</td> </tr> </tbody> </table>	Reason	Percentage	I don't understand mobile payment options	43%	The places I shop don't accept mobile payments	50%	It's difficult to set up or use mobile payments	57%	Comfortable with cash transaction	64%	Mobile payments are NOT accepted in all physical stores	14%
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<p>16</p>	<p style="text-align: center;"><b>What factors restrict you from making mobile payment in physical stores?</b></p> <table border="1"> <thead> <tr> <th>Factor</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>I'm concerned about the security of mobile payments</td> <td>43%</td> </tr> <tr> <td>I don't really understand all the different mobile payment options</td> <td>14%</td> </tr> <tr> <td>It's difficult to set up or use mobile payments</td> <td>14%</td> </tr> <tr> <td>The places I shop don't accept mobile payments</td> <td>29%</td> </tr> <tr> <td>Other</td> <td>29%</td> </tr> </tbody> </table>	Factor	Percentage	I'm concerned about the security of mobile payments	43%	I don't really understand all the different mobile payment options	14%	It's difficult to set up or use mobile payments	14%	The places I shop don't accept mobile payments	29%	Other	29%
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**FINDINGS**

The findings show that all the respondents make cash payment in physical retail store while purchasing out of which 36% customers make cash payment a couple of times in a week, while 14% respondents make cash payments three to six times a week and 29% respondents make cash payment on daily basis.

58% of the respondents admitted that they visit the physical retail store frequently (3 or more times a week) and 28% respondent visit the retail store sometime (i.e. twice or trice a fortnight) only 14 % respondents said that they visit the physical store rarely but none of them mentioned that they don't visit the physical retail store.

Out of 99 respondents 82 (i.e. 92%) are having bank account while 7 (i.e. 8%) respondents do not having bank account.

88% respondents admitted that they prefer cash payment for small transaction over digital payment using mobile. In addition to this, when asked about various tools of making payment during purchase in physical retail store, 89% said that they prefer cash payment while 29% said that they prefer debit/credit card and only 24% said that they would prefer mobile wallet.

When asked about awareness about E-wallet only 39% respondents said that they are fully aware where as 28% of the respondents were partially aware. Remaining 30% respondents were unaware about functionality of e-wallets.

65% respondents said that they make the mobile payment occasionally during purchase in physical retail store whereas 35% respondents said that they never made payment using mobile wallets while buying the product/commodity from physical retail store.

The survey revealed that most of the people use e-wallets for online shopping, utility and bill payment, online recharge of services and fund transfer. Only 13% respondents said that they use the mobile wallet for making payment in physical retail stores.

When asked about the reason for not adopting mobile payment 64% respondent said that they are comfortable with cash payment, 57% said that it is difficult to make mobile payment, 50% respondents said that vendors don't accept the mobile payment, 43% said that they don't understand the mobile payment options while 14% people don't make mobile payment because it is not pervasive.

When asked about the factors that restrict the customers from making mobile payment, 43% respondents said that they are concerned about security of mobile payments whereas 29% said that the shopkeeper doesn't accept the mobile payment, 28% respondents said that difficulty in setting up and operating mobile payment apps. 29% respondents said that internet connection or bad network connection which delays the transaction and sometimes result in failure of making payment.

The survey also revealed that elderly people find it difficult to make mobile payment.

## CONCLUSION

Conversion from cash to cashless is not just about customer preferences. It requires the entire ecosystem of retailers/suppliers; customers and vendors must be willing to adopt mobile payment technology. The prominent hindrances in the way of mobile payments are digital illiteracy, security concerns, issue with internet connectivity, easy availability of cash and ambiguity about transaction charges. One issue with Smartphone is that less expensive Smartphones aren't always NFC-capable. Merchants are also not fully aware of the policies and regulations around accepting digital payments. Consumers don't want to adopt a system that's not pervasive and easy to use, and retailers don't want to invest in adding in-store technology unless there is a significant demand for it.

India is a developing nation and a cash-based economy. However, after demonetization there was a sudden increase in the digital payment due to cash crunch but after one year when the cash made available digital payment rate collapsed. India has a huge population of digital illiterates; it will take a lot of time to transform India into a cashless economy.

Although the government is promoting cashless transactions and setting up websites for educating the citizens, illiterate and poor people are not in a position to take advantage of it. The trend of mobile payment will enhance gradually with cash and will take several years to replace cash. Cash transactions prevail because they offer a quick way to transact in uncomfortable and crowded market places. In addition to this, cash transactions do not require mobile phones and internet connection. Some retailers do not accept digital payment to evade from tax.

In order to enhance the adaptability of mobile payment or digital payment the government should consider the following points-

1. Improving internet infrastructure and payment security.
2. Illiterate, old age and rural people need to be educated about mobile/digital payments and its advantages.
3. Ensuring that every citizen has a bank account.
4. Gradually reducing the number of ATMs to restrict easy availability of cash.
5. Quick settlements of frauds and digital payments issues.
6. Transparency about transaction charges when paying through app, transaction charges should be null or minimum.

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