# Understanding the Impact of Cashless Payment System on Consumer Buying Behaviour in the Era of Demonetization in India

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#### Abstract

The study aims to examine the impact of cashless payment system on consumer buying behavior in the aftermath of Demonetization (2016) in India using a Technology Acceptance Model (TAM) described and tested by Davis (1989).

### Design/Methodology/Approach

Simple random sampling has been employed to collect primary data of the study through questionnaire which interprets cashless payment adoption from consumers' viewpoint. The independent variables of the study includes Perceived Compatibility, Perceived Security, Perceived Ease of Use, Perceived Usefulness, Subjective Norm and Perceived Support System. The dependent variable of the study is frequency to use cashless modes of payment. The study constitutes empirical research design. Descriptive analysis of the study has been done using bar graphs, frequency and percentage. Multiple Regression Analysis has been employed to determine the impact of cashless payment system on consumer buying behavior.

## **Findings**

The study depicts that there is significant impact of cashless payment system on the frequency to use cashless modes of payment by consumers. It has been determined that ease of use is most closely correlated to frequency to use cashless payment system, followed by usefulness, compatibility, subjective norm, security and support. The study has been assessed as a good fit for the regression model.

## Originality/Value

The study expanded upon the limited research available on the impact of cashless payment system on consumer buying behavior after demonetization announced by Government of India in November, 2016.

**Keywords:** Cashless Payment System, Demonetization, Consumer Buying Behaviour.

JEL Classification: M31, O33

#### Introduction

On 8<sup>th</sup> November, 2016, Indian Government under the leadership of PM Narendra Modi launched a surgical strike against black money and corruption through demonetization. Circulation of all INR 500 and INR 1000 bank notes of Mahatma Gandhi series was declared invalid with immediate effect. In exchange for the old banknotes, it was also announced that new banknotes of INR 500 and INR 2000 of Mahatma Gandhi series will be issued. Indian currency has been demonetized in India earlier also. In 1946 demonetization has been was done to deal with the unaccounted money i.e. Black Money with the complete ban of Rs. 1000 and Rs. 10000 Notes. Thereafter it has been by Morarji Desai Government in 1978 when Rs. 1000, Rs. 5000 and Rs. 10000 Notes were demonetized.

Making India a cashless society was the major aim of demonetization undertaken in 2016. The concept of cashless transaction has become very common with the rapid expansion of technology in banking and financial sector. Demonetization along with various other recent government policies have made cashless transaction a necessity for all. According to Roy (2017) in his book 'Facts and Figures of Demonetization in India: Views, Reactions and Impact' the most innovative idea is the implementation of digital India which is the program that is going to transform India into a digitally empowered nation with good economy knowledge.

The present study will concentrate on the impact of cashless payment system on consumer buying behavior in the era of demonetization in India. Since demonetization, the proportion of population using cashless modes of payment has increased. Hence, the study aims to highlight how the cashless modes of payment will influence the consumer buying behavior when circulation of cash in the economy is less.

#### Research Problem

- Liquidity in the economy decreased temporarily after the announcement of Demonetization, since India was basically a cash based economy. Decreased liquidity resulted into declining demand which resulted into reduced productivity causing a slowdown in consumer market.
- Due to sudden announcement people were panicked. This compelled masses to save and store more money. Thus, leading to slowdown in consumer market.
- Since people will have less money in hands, demonetization will decrease growth rate in short term and medium term.
- · Alternative forms of payment are becoming more popular, with declin-

ing cash transactions.

- Furthermore, major aim of demonetization has been making India Cashless society as a result there has been a huge surge in the usage of cashless modes of payment such as net banking, E-wallet and mobile payments.
- Based on the above identified research problems previous research studies based on demonization, cashless payment system and consumer buying behavior were reviewed thoroughly in order to get an in-depth understanding of the concepts and research methodology applied.

#### Review of Literature

Vani et al (2017) in the paper titled 'Impact of Demonetization among the Public in Panruti Taluk' explained the impact of demonetization among the rural people in Panruti Taluk. The study analyzed through the use of structured questionnaire. Mishra and Parth (2017) analyzed the impact of demonetization with reference to influence of cashless payments, strategizing for efficient store operations in a situation of shortage of cash. Gaur (2017) studied the concept of demonetization and its after effects on the digitalization of Indian economy. The paper revealed that demonetization has opened the passage to the cashless economy which has been done through digital payments.

Banerjee (2017) analyzed the influence of demonetization on frequency of buying the product by consumer and mode of payment adopted through online shopping post demonetization. The paper highlighted that demonetization has opened up multitude of opportunities for the e commerce industry. This will turn out to be a huge boon for digital payment market. Francis (2017) pointed out that majority of the respondents were equipping themselves into learning the cashless modes of payment but a minority among this educated class was yet to adapt to the cashless modes of payment

Humbani, M., & Wiese, M. (2018) aims to understand the readiness of consumers to adopt cashless modes of payment and the moderating role of gender. Findings of the study indicate that compatibility and convenience act as motivators for cashless adoption whereas security concern and cost act as inhibitors. Karjaluoto et.al. (2019) identified that consumer's satisfaction and habit have significant influence on consumer's intentions to use online payment systems. The study furthermore employed UTAUT2 and the CBE model to examine the intentions of consumers.

Xena, P., & Rahadi, R. A. (2019) illustrated six independent variables that

influence adoption of online payment system by small medium enterprises. The variables include acceptance of technology, effort expectancy and social influence. Bhuvana, M., & Vasantha, S. (2017) aims to infer the factors responsible for analyzing the use of cashless modes of payment among the residents of Chennai city in India. The findings of the study indicate that attitude and behavioral intentions are greatly influenced by moderating effect of demonetization.

Rahman, M., Ismail, I., & Bahri, S. (2020) analyzed that facilitating condition and performance expectancy have significant contribution in determining the influence of cashless payment system. The study was helpful for policymakers in in identifying the consumers concerns for successful creation of cashless society.

#### Research Gap

Demonetization opens up the passage of cashless economy for India which has been done through digital payments. Furthermore, there has been a huge surge in the usage of net banking, E-wallet and mobile payments. Digitalization along with positive aspects such as quick transactions increases security concerns as well. Furthermore, the government of India has been issuing guidelines through Reserve Bank regarding the security concern of cashless payment.

Review of Literature revealed that there are many studies about analyzing consumer attitude towards internet banking and mobile banking. In post demonetization scenario, government is encouraging people to go cashless by adopting and adapting to the digital mode of financial transactions. Review depicts that there are very few research studies addressing the impact of cashless payment system on consumer buying behavior after demonetization announced by GOI in November, 2016. Hence, the present study aims to fulfill this research gap by examining the impact of cashless payment system on consumers' buying behavior in Jaipur region.

## Significance of the Study

- The study would be significant in understanding the opinion of the common educated man, who are meant to enact the whole process of transformation of India into a cashless economy and how they take this initiative of demonetization.
- The study will also help to determine the impact of demonetization on Indian economy.
- Furthermore, the results of the study can be used by various stakeholders like cashless payment service providers, banking firms, government

and marketers.

### Objectives of the Study

- To determine the impact of cashless payment system on consumers buying behavior in Jaipur region.
- To identify the level of importance of each of the factors of cashless payment system for consumers.

### Variables of the Study

Independent Variables of the study are:

- Perceived Compatibility
- Perceived Security
- Perceived Ease of Use
- Perceived Usefulness
- Subjective Norm
- Perceived Support System

Dependent Variable of the study:

## Hypothesis of the Study

 $\mathbf{H}_{o}$ : There is no significant impact of cashless payment system on the frequency to use cashless modes of payment by consumers.

**H**<sub>a</sub>: There is significant impact of cashless payment system on the frequency to use cashless modes of payment by consumers.

## Conceptual Model of the Study

The widely accepted model which determines customer acceptance of various information system for explaining technology usage behavior described and tested by Davis (1989) has been employed in this study. The model will be used to interpret customers' attitudes towards different technological innovations and will aim to comprehend the cashless payment adoption from consumers' viewpoint. It is called the "Technology Acceptance Model" (TAM).

## Scope of the Study

The scope of the study is restricted to service class employees working in Jaipur.

## Research Design

This study has employed descriptive and empirical research design.

### Sampling Technique

- Simple Random Sampling has been used to collect data for the study.
- Universe comprises of service class employees working in Jaipur.
- Area of survey of the study constitutes Jaipur.

### Sample Size

Sample size of the study constitutes 135 respondents.

#### **Data Collection**

Primary data of the study is collected through questionnaire and interview. Questionnaire used for the study consists of two sections. Section A consists of questions on demographic information of respondents. Section B consists of statements on selected factors of cashless payment system on a five point likert scale ranging from 1=strongly disagree and 5=strongly agree. 'Technology Acceptance Model' (the TAM). Secondary data of the study is collected through journals, newspaper articles and government reports. For the study; IBM SPSS 22 (Statistical Package for Social Sciences) has been used for analysis.

### **Data Analysis**

Following steps are used for data processing:

- Editing
- Coding
- Classification
- Tabulation

**Statistical Analysis:** Statistical Analysis was conducted in following two ways:

- **a. Descriptive Statistical Analysis:** Descriptive Statistical Analysis tools used in the study are mean, frequency, percentage and graphs.
- **b. Inferential Statistical Analysis:** Inferential Statistical tool used for hypothesis testing in the study is Multiple Regression.

## Pilot Study: Reliability and Validity

Reliability of the study has been measured using Cronbach's Alpha.

Table 1: Pilot Study-Reliability Statistics - Results of Cronbach's Alpha on the Scale

S. No.	Variable	Cronbach's Alpha	Number of Items
1.	Perceived Compatibility	.766	3
2.	Perceived Security	.705	3
3.	Perceived Ease of Use	.743	5
4.	Perceived Usefulness	.790	5
5.	Perceived Subjective norm	.702	3
6.	Perceived Support	.713	1
7.	Frequency to use cashless payment system	.735	3

Source: SPSS 22 Result of Primary Data

Table depicts that Cronbach's alpha is 0.70 indicating high level of internal consistency for the scale used in the study.

Validity of the study was measured using KMO and Barlett's Test.

Table 2: Kaiser-Meyer-Olkin (KMO) and Bartlett's test on the scale

Kaiser-Meyer-Olkin Mea-	Bartlett's test of Sphericity				
sure of Sampling Adequacy	Approx. Chi-Square	Df	Sig.		
.682	182.751	36	.010		

Source: SPSS 22 Result of Primary Data

Table depicts that KMO measure is greater than 0.60 which shows the study is satisfactory for sample adequacy and hypothesis testing. Furthermore, the study is significant as the Bartlett's test of Sphericity is 0.010.

## **Analysis and Interpretation**

Demographic profile of respondents.

Table 3: Demographic profile of respondents

Parameters	Category	Freq.	Percent
Gender	Male	29	39.7
	Female	106	60.3
	Total	135	100
Age	Below 25	17	12.5
	26-35	64	47.2
	36-45	42	31.1
	Above 46	12	8.8
	Total	135	100
Marital Status	Married	66	48.8
	Unmarried	69	51.1
	Total	135	100
Income	Below 5 Lakh	54	39.5
	5 Lakh-15 Lakh	66	48.7
	Above 15 Lakh	15	11.8
	Total	135	100
Occupation	Teaching, Educational	42	31.1
	Managerial, Executive	33	24.4
	Administrative, Clerical	17	12.5
	Marketing, Sales	20	14.8
	Engineering, Technical	19	14.1
	Others	4	2.96
	Total	135	100

Source: Primary data

## Hypothesis Testing

Regression analysis was conducted on scaled items using SPSS (Statistical Package for Social Sciences). A multiple regression was used to estimate the effect of the six identified factors (compatibility, security, ease of use, usefulness, subjective norm, support) on the frequency to use cashless payment system by consumers.

The regression model was proposed as follows:

$$Y_s = \beta 0 + \beta 1X1 + \beta 2X2 + \dots \beta 6X6,$$

Where:

Ys = Frequency to use cashless payment system by consumers

 $\beta$ 0 = Constant (coefficient of the intercept)

X1 = Compatibility

X2 = Security

X3 = Ease of use

X4 = Usefulness

X5 = Subjective norm

X6 = Support System

Table 4: Model Summary<sup>b</sup>

Model	R	R	Adjusted	Std. Error	Change Statistics					
		Square	R Square	of the Estimate	R Square Change	F Change	df1	df2	Sig. F change	Durbin -Watson
1	.993ª	.987	.986	.05176	.987	1582.900	6	126a	.000	2.382

**Source:** Primary data with SPSS 22 results

- a. Predictors: (Constant), Compatibility, Security, Ease Of Use, Usefulness, Subjective Norm, Support
- b. Dependent Variable: Frequency to Use Cashless Payment System

Table 3.25 depicts that the adjusted R Square is 98.6% of the variance was explained by the six factors (compatibility, security, ease of use, usefulness, subjective norm, support), which is reported as a good fit for the regression model (Hair et al., 2010).

Table 5: ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	25.446	6	4.241	1582.900	.000ь
1	Residual	.338	126	.003		
	Total	25.783	132			

Source: Primary data with SPSS 22 results

- a. Dependent Variable: Frequency to Use Cashless Payment System
- b. Predictors: (Constant), Compatibility, Security, Ease Of Use, Usefulness, Subjective Norm, Support

Table 3.26 depicts that based on the ANOVA, Sig. represents the statistical

significance of the regression model that was applied. F-statistic is 1582.900 with p-value of 0.000. Hence, the alternative hypothesis of the study i.e. there is significant impact of cashless payment system on the frequency to use cashless modes of payment by consumers has been accepted.

Based on the regression analysis slopes, all six of the independent variables are statistically significant, which means that all six independent variables are significant predictors of frequency to use cashless payment system (compatibility, ease of use, usefulness, security, subjective norm, support).

**Table 6: Regression Coefficients** 

Model B		Uns dard Coeffi	ized	Stan- dard- ized Co- effi- cients	Т	Sig. Zero Order	Correlations		Collinearity Statistics		
		Std. Error	Beta				Partial	Part	Tol- er- ance	VIF	
1	(Constant)	826	.373		-2.188	.014					
	Compati- bility	.163	.045	.139	3.856	.000	.560	.276	.125	.705	1.461
	Security	.128	.038	.114	3.301	.002	.546	.188	.096	.691	1.447
	Ease of Use	.495	.055	.441	7.642	.000	.859	.474	.237	.258	3.894
	Usefull- ness	.398	.080	.287	4.543	.000	.822	.286	.147	.261	3.872
	Subjec- tive Norm	.234	.099	.061	2.221	.031	.381	.116	.038	.932	1.169
	Support	.243	.109	.045	2.243	.026	.241	.140	.067	.811	1.259

Source: Primary data with SPSS 22 results

## a. Dependent Variable: Frequency to use Cashless Payment System

Table 3.27 shows the effects of independent variables (compatibility, security, ease of use, usefulness, subjective norm, support) on the dependent variable (frequency to use cashless payment system). Regression coeffi-

cients for each of the named factors provide estimates for their magnitude and direction.

According to Table, ease of use is most closely correlated to frequency to use cashless payment system, followed by usefulness, compatibility, security, subjective norm and support. Furthermore, all six independent variables are not correlated to each other.

Table 7: Level of importance of each of the factors of cashless payment system for consumers

Variable	Beta	Level of Importance
Perceived Ease of Use	.441	1
Perceived Usefulness	.287	2
Perceived Compatibility	.139	3
Perceived Security	.114	4
Perceived Subjective norm	.061	5
Perceived Support	.045	6

Source: Primary data with SPSS 22 results

Y =  $-0.826 + 0.163_{(0.139)}$  (Compatibility) +  $0.128_{(0.002)}$  (Security) +  $0.495_{(0.000)}$  (Ease of Use) +  $0.398_{(0.000)}$  (Usefulness) +  $0.234_{(0.0321)}$  (Subjective Norm) +  $0.243_{(0.020)}$  (Support)

## Table 3.27 depicts that:

- There is significant impact of perceived compatibility on the frequency to use cashless modes of payment by consumers with the standardized regression coefficient of 0.139 (p<0.000).
- There is significant impact of perceived security on the frequency to use cashless modes of payment by consumers with the standardized regression coefficient of 0.114 (p<0.002).
- There is significant impact of perceived ease of use on the frequency to use cashless modes of payment by consumers with the standardized regression coefficient of 0.441 (p<0.000).
- There is significant impact of perceived usefulness items on the frequency to use cashless modes of payment by consumers with the standardized regression coefficient of 0.287 (p<0.000).</li>
- · There is significant impact of subjective norm on the frequency to use

cashless modes of payment by consumers, with the standardized regression coefficient of 0.061 (p<0.031).

There is significant impact of perceived support system on the frequency to use cashless modes of payment by consumers, with the standardized regression coefficient of 0.045 (p<0.026).</li>

### Findings and Implications of the Study

## Compatibility

**Findings:** The study identified that 64.3% respondents strongly appreciated using cashless payment system in department stores/restaurants/café instead of using cash. Approximately 56% of respondents strongly agreed with the statement that cashless payment is compatible with their lifestyle. Furthermore, around 80% of the respondents were of the opinion that using a cashless payment at department stores/hotels fits well with the way they would like to purchase products and services.

**Implications:** Findings of the study implied that cashless payment systems are compatible with the values, experiences and behavioral patterns that consumers already have.

## · Perceived Security

**Findings:** The study identified that 36.2% of the respondents disagree with the statement that the risk of abuse of usage information (e.g., names of business partners, payment amount) is low when using cashless payment system. Approximately 60% of the respondents were of the opinion that there is risk of abuse of billing information while using cashless payment system. Furthermore, 31% of the respondents were of the opinion that cashless payment services are not secure for conducting the payment transactions. Followed by 38% respondents had neutral opinion towards the perceived security for conducting the payment transactions.

**Implications:** Findings of the study implied that new technologies usually pose some risks (Schierz at al., 2010) along with various benefits. In the context of cashless payment system, the biggest concern for consumers lies in the probability of the invasion of their privacy.

#### · Perceived Ease of Use

**Findings:** The study identified that 72.4% of the respondents were of the opinion that learning cashless payment system is easy. Approximately 75% of the respondents were of the opinion that it was easy to use cashless payment system to do what they want to do. Furthermore, around 80% of the respondents were of the opinion that it would be easier for them to

become skillful at using a cashless payment system. Furthermore, around 86% of the respondents were of the opinion that there interaction with the cashless payment system was be clear and Understandable. Majority of the respondents were of the opinion that cashless payment system is easier to use.

**Implications**: Findings of the study implied that according to consumers, using cashless payment system was hassle free and simple to carry out routine transactions.

#### Perceived Usefulness Items

Findings: The study depicted that around 86% of the respondents were of the opinion that using cashless payment system enables them to pay quickly. Majority of the respondents were of the opinion that using cashless payments would make it easier for them to conduct transactions. Approximately 82% of the respondents were of the opinion that using cashless payments system takes less time and effort than using traditional payments. 80% of the respondents were of the opinion that their experience as a consumer has improved by using cashless payment services. Furthermore, majority of the respondents were of the opinion that using cashless payment system is useful for making payments.

**Implications:** Findings of the study implied that consumer would prefer using cashless payment system only if they believe that using a particular system would enhance his or her job performance. (Mallat, 2007).

## • Subjective Norm

**Findings:** The study revealed that approximately 80% of the respondents were of the opinion that people who are important to them would find using cashless payment beneficial. Around 70% of the respondents believed that people who influence their behavior think they should use cashless payment system. Furthermore more than 70% of the respondents were of the opinion that people who were important to them thought that they should use cashless payments system.

**Implications:** Findings of the study implied that the social context of the consumer alos plays prominent role. (Nysveen et al., 2005; Schierz et al., 2010).

## Support

**Findings:** The study identified that 63.2% of the respondents strongly agree with the statement that they have support system like availability of wifi, net connectivity and suitable mobile phone for making cashless

payment.

**Implications:** Findings of the study implied that availability of proper support system such as net connectivity, wifi connection along with suitable mobile phone are essential for the hassle free usage of cashless mode of payment.

## Frequency to use cashless payment system

**Findings:** The study identified that approximately 75% of the respondents were of the opinion that they have started using cashless payment system more often since demonetization. It was infereed that 63.8% of the respondents were willing to use cashless payment system in near future. Furthermore, 60.3% of the respondents strongly intend to use cashless payment services when the opportunity arises.

### Findings and Conclusion of Hypotheses Testing

In order to accomplish the objective of the study six hypotheses have been framed and tested for inferential study. Multiple Regression has been performed for hypotheses testing.

- Findings revealed that 98.6% of the variance was explained by the six factors (compatibility, security, ease of use, usefulness, subjective norm, support), which is reported as a good fit for the regression model. Furthermore, alternative hypothesis of the study i.e. there is significant impact of cashless payment system on the frequency to use cashless modes of payment by consumers is accepted.
- Findings revealed that perceived compatibility, perceived security, perceived ease of use, perceived usefulness items, subjective norm and perceived support system has significant impact on the frequency of usage of cashless modes of payment by consumers.
- Furthermore, the study revealed that ease of use is most closely correlated to frequency to use cashless payment system, followed by usefulness, compatibility, security, subjective norm and support. One of the most significant theoretical findings is that ease of use has the greatest impact on the frequency to use cashless mode of payments.
- Usefulness was the second most closely correlated variable to frequency to use cashless payment system. Perceived usefulness is "the degree to which a person believes that using a particular system would enhance his or her job performance" (Mallat, 2007). Hence, if the consumer has clear understanding of the benefits of cashless modes of payment then his/her frequency to use cashless system will be more.

- Compatibility was the third most closely correlated variable to frequency to use cashless payment system. Thus, in order to consider adoption of cashless payment system by consumers, people must find them to be aligned with their existing behavioral patterns.
- Security was the fourth most closely correlated variable to frequency to use cashless payment system. Security influences the frequency of use of online payment system by consumers.
- Subjective norm was the fifth most closely correlated variable to frequency to use cashless payment system. The subjective norm, is the degree to which a social environment perceives cashless less payment as desirable.
- Support system was the sixth most closely correlated variable to frequency to use cashless payment system. Hence, availability of proper support system such as net connectivity, wifi connection along with suitable mobile phone are essential for the hassle free usage of cashless mode of payment.

#### Suggestions

The study has applied the TAM model to determine the factors which influence the frequency to use cashless payment system by consumers. Several new insights were generated from the results of this work. Clear understanding of consumers' preferences is essential by all stakeholders involved in the decision-making process.

- First, the study indicated that cashless payment service providers, should pay close attention to six factors: compatibility, usefulness, the subjective norm, security, ease of use and support. These dimensions can be effective in increasing the number of consumers using cashless payment system and further market penetration of cashless payment services.
- Advertisements should be created to attract trendy, innovative, tech
  friendly generation of individuals, who desire flexibility offered by
  cashless payment system. The marketing strategy should highlight the
  advantages of cashless modes of payment, including the ease of using
  one's.
- Cashless payment service providers should focus on Consumer Advocacy by educating consumers on the benefits of cashless payment. They should create features that will help consumers adapt to this new form of payment in their buying process.
- Advertising campaign's should focus on implementing word-of-mouth

- techniques for the promotion of the image of consumers who use cashless payment system
- Security should be taken into consideration when designing E-payment system in order to increase the consumers' intention to use cashless payment system. As far as security is concerned, consumers should be educated.

## Limitations of the Study

- Sample size of the study is small, which is not representative of the entire population. Hence, the results of the study cannot be generalized.
- Paucity of time was the another limitation of the study.

### Scope for Future Research

- To have an in depth understanding about the consumer intention to use cashless payment system, it is recommended to adopt the SER-QUAL model to determine the current customers' satisfaction level.
- Demographic variables such as age, gender and occupation can be used in future studies to identify the market segment most likely to use cashless payment system.
- Factors such as trust, risk, costs along with technological factors which are not included in the TAM model can also be included to determine their impact on frequency of use cashless payment system.

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