

A Study on impact and Acceptance of Implementation of Digital India app based Payments Schemes

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Abstract

India is one of the growing economies which has a potential to out-develop other countries. The adoption of digital schemes in banking services will reduce the overall efforts thus, reducing the amount of time for making banking and financial transactions, exponentially. To tap into this potential, Digital India is a major step towards achieving this goal. The effective implementation and creating awareness is the key and basic requirement for the success of the digital India initiative. The project focuses on the perception of the residents of Udupi District, Karnataka, India towards the usage of Digital Payment Apps/Methods. The district being known for the intellectual population of the Karnataka State. The opinions a sample group was collected to determine the enablers and barriers of using Digital Payment Apps. India is a vast country with 68% of its population living the rural regions the implementation of reforms take considerable time and efforts to have a reasonable impact. As the rural population being more conservative it becomes a challenge for the implementation rate. The study involves identification and evaluation of the crucial factors which affected usage. These factors, ranging from gender to age to employment status, etc. were then used as a basis for formulating a set of questions and the responses obtained of the subjects were recorded and analyses for further insight on the impact of these apps or methods on the day-to-day life of a resident of Udupi, Karnataka, India. A trend can be observed in the increase in usage of digital payment apps in India and after demonetization

Keywords: Digital India, cashless, security, technology, transactions, payments

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I. INTRODUCTION

Digital India is an ambitious programme of Government of India to transform Indian into a digitally empowered knowledge economy. The program is initiated by the Department of Electronics and Information Technology (DeitY). The digital payments will encourage cashless transactions with security and safety at the highest speed. Also, reduces the risks of robbery, corruption. This program is focused on decreasing the paper work and giving Indian citizens quick access to electronic Government administrations.

The program is assumed to coordinate the rural and urban government bodies by interfacing them

with high speed web services. Digital India is a venture of ₹1,13,000 crores made by the Government of India for empowering the businesses of all sizes and open the doors of digitization to the world. The clarity in policies is an important parameter to clear all the infrastructural bottlenecks for successful implementation of the schemes. Some prominent challenges faced are regulatory road blocks, idle government request for proposals (RFPs), digital divide, poor connectivity, improper policy making. This project focuses on finding out the hurdles faced by the programme in reaching its targets.

A. Unified Payment Interface

Unified Payment Interface (UPI) is a real time payment system implemented for inter-bank transactions. The interface works towards instant transfer of the funds between same or other banks using mobile platform. The transactions through UPI is monitored by Reserve Bank of India. This service works irrespective of what hour of the day it is and works on holidays making it convenient for the masses. A traditional mobile wallet takes the specified amount of funds from the user's bank account and stores in its own accounts, UPI extracts the desired amount directly from the user's bank account and deposited it in to the specified end user. It operates using virtual payment address a unique ID provided by bank or one-time use virtual ID, Account Number with IFS Code. A UPI-PIN which a person is required to create during the installation stages of the app is required to authenticate payment each time.

One unique feature about UPI is user can use some of the services offline by dialling *99#. Offline services include: Financial Services (Funds Transfer - Send Money / Receive Money), Non-Financial Services (Balance Enquiry and Change MPIN).

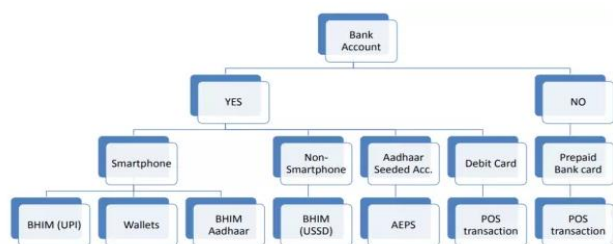


Figure 1. Flow chart to assess user's eligibility to use BHIM App

The Figure 1. Shows the procedure to access the digital payments app of a user with or without a bank account using smart or non-smart phone.

II. METHODOLOGY

The objective of the current stud is to explore and identify the factors which significantly influence the people of India towards the acceptance of Digital India campaign and formulate hypothesis to test the significance of these factors on the

acceptance of Digital India campaign. The research involved stage-wise order of the methodological stages is listed below.

A. Verbal interaction

Based on the knowledge gathered during literature review, preliminary questions of the most basic level of complexity were decided. These questions, on the general concept and perception of digital payment apps were then answered verbally by different individuals belonging to various age groups and employment status.

B. Pre-survey

Subjects were then asked to express their opinions on listing three enablers and barriers for usage of digital payment apps. A collective idea of the enablers and barriers pertaining to the survey were determined with the help of popular responses and opinions.

C. Questionnaire survey

Based on the enablers and barriers decided through pre-survey, a list of questions tackling various aspects of the survey was prepared.

These questions were then listed in the form of a questionnaire for the subjects to answer according to their own beliefs and opinions. The final questionnaire which was prepared consisted of 23 questions, which were then distributed both online and person to person. For the convenience of non-English speaking residents, the questions were translated to Kannada and new questionnaires were also prepared in Kannada. Responses from 156 subjects were recorded and then processed for result analysis.

D. Result Analysis

Hypothesis Formulation: A pair of contradictory hypothetical statements is first taken into consideration. The first one is called the "Null Hypothesis" while the other is known as "Alternative Hypothesis". This set of hypotheses is better explained with the aid of actual case scenarios. For instance, if the response of the first label (gender) is considered, then the Null Hypothesis would imply that there is no significant influence of gender on usage of digital

transaction apps whereas, the Alternative Hypothesis would imply that there is significant influence of gender on usage of digital transaction apps. Performing Levene's test for equality of variances, we obtain the value of sigma (σ). If this value of sigma is less than 0.05, then the Alternative Hypothesis is taken into consideration. If the same value is greater than 0.05, then Null Hypothesis is considered.

E. One Way ANOVA

The method is used to statistically analyze the significant differences between the means of two or more independent (unrelated) groups. The means of the samples or groups are compared using one-way ANOVA in order to make inferences about the population means. The One-way ANOVA is also called a single factor analysis of variance because there is only one independent variable or factor.

III. RESULTS AND DISCUSSIONS

The result obtained from the survey and the effects of the usage patterns of the people with respect to various aspects such as age, gender, residence, occupation were considered for evaluation. The study shows that the majority of the subjects who were part of this survey, have used a digital payment app before. Figure 4 shows that majority of the subjects, at a 74% have used payment apps before and 26% people have their reservations about the concept of payment apps. Most subjects use these apps as they have become a part and parcel of their day to day lives. They offer a great deal of convenience to the users.



Figure 2. Pie chart representing percentage of digital payment users

People tend to choose apps which suit their needs and liking from the wide range of apps available. Traditional payment apps cannot send money across platforms. UPI based apps such as BHIM and Google Tez can transfer money straight in to the bank account of a person if you have the phone number, account number, Aadhaar Card number or the UPI ID. From the Figure 3, we can see that private players like PayTM still have the majority of the share, but Google Tez is rapidly catching up because of its attractive cashback offers. Even the government owned BHIM app is catching up with the market leaders.

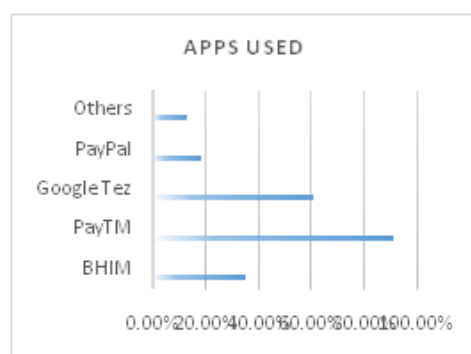


Figure 3. Bar chart representing apps used by the subjects

In the age of technology and digitization, everyone is trying to be on board the wave and benefit from it in their personal and professional lives. However, there are people who have never used any of the technology and might have some reservations about the extent of security of the transactions. Figure 4 shows that subjects who have not used payment apps are concerned about the extent of security used by the payment apps.

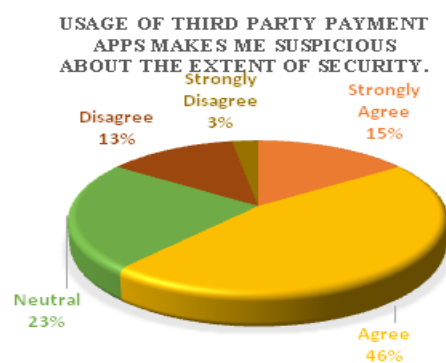


Figure 4. Chart representing usage of third part apps

Most subjects agree that the reason for them not using payment apps is because they are concerned about the extent of security. This might be due to the lack of awareness about encryption used by the payment apps. After conversing with one of the subjects during the survey, we asked them for their opinions about the extent of security implemented in the payment apps. The subject expressed his/her opinion as:

“Vulnerability to cybercrime is a major issue. As digitization progresses, monitoring every app will be difficult. There are various apps on Google Play Store and iOS AppStore which google does not back up or verify. So, people who don’t know much about verified apps can install such apps and might lose their confidential information or even worse their assets.”

Development of payment apps requires financial investment by the app developers and investors. Keeping these services running requires funds and the app developers would want to maximise the profit while charging the customers as little as possible.

“The convenience of payment apps is a service provided by an app developer. While transacting, a percentage of the payment amount is charged as a convenience charge. It is borne by the sender or the receiver.”

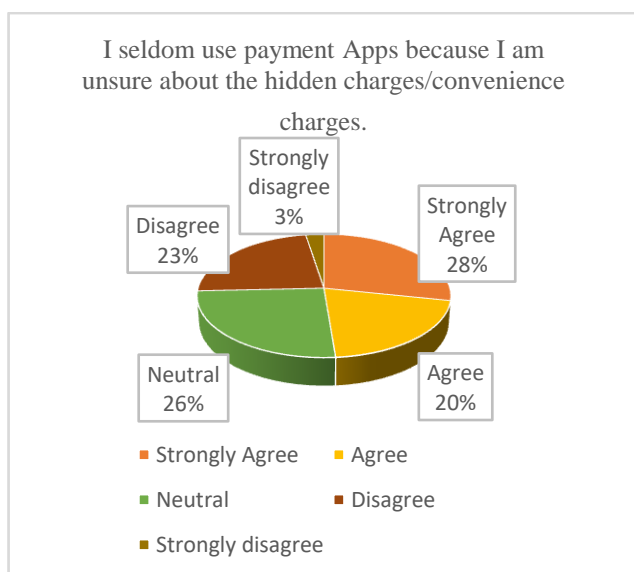


Figure 5. Pie chart representing people’s opinion about hidden charges

A. Descriptive Statistical Analysis

This chapter discusses results and conclusions derived from the research. A total of 156 subjects responded to the questionnaire that was served. The descriptive statistics are follows:

To find if any significant difference in usage patterns of digital payment apps in comparison of gender, independent sample T-test was used. Hypothesis were formulated as follows: Null Hypothesis: There is no significant influence of gender on usage of apps and Alternate Hypothesis: There is significant influence of gender on usage of apps.

Table 1. Usage of app, comparison gender wise

	Have you used digital payment apps before?	N	Mean	Std. Deviation	T-value	P-value
Gender	Yes	114	1.31	.463	0.03	0.976
	No	42	1.31	.468		

Since the P-value is greater than 0.05, the null hypothesis is accepted, hence there is no significant difference in the usage patterns across gender.

To find whether there was a significant difference in usage patterns of digital payment apps, ANOVA (Analysis of Variance) test was used. The hypothesis were formulated as follows: Null Hypothesis: There is no significant difference between the usage of apps across age groups and Alternate Hypothesis: There is significant difference between the usage of apps across age groups.

Table 2. Usage of apps, comparison age wise

Variety	Mean	F-value	P-value
<18	1.33 ^b		

18-35	1.21 ^a	13.902	0.000**
>35	1.80 ^b		

Since P-value is less than 0.01%, the hypothesis is rejected, hence, there is significant difference between usages across age group. Based on Tukey HSD test, age group 18-35 (1.21) varied significantly over age group <18 and >35. However, there was no significant difference between age groups <18 and >35.

To find whether there was a significant difference in usage patterns of digital payment apps of transaction tracking abilities, we used independent sample T-test. Hypothesis were formulated as follows: Null Hypothesis: There is no significant influence of gender on usage of transaction tracking ability and Alternate Hypothesis: There is significant influence of gender on usage of transaction tracking ability

Table 3. Usage of transaction tracking abilities of apps with respect to gender

	Gender	N	Mean	Std. Dev.	T-value	P-value
I find it easy to track my transactions on the click of a button using payment Apps.	Male	79	4.03	.832		
	Female	35	4.00	.874	0.145	0.88

Since the p-value is greater than 0.05, the null hypothesis is accepted, hence there is no significant difference in the usage patterns across gender.

To find whether there was a significant difference in usage patterns of digital payment apps, ANOVA (Analysis of Variance) test was applied.

Hypothesis were formulated as follows: Null Hypothesis: There is no significant impact on transparency of the system due to payment apps and Alternate Hypothesis: There is significant impact on transparency of the system due to payment apps.

Table 4. Analysis on people's opinion on transparency of the system due to the usage of payment apps based on age

Variety	Mean	F-value	P-value
<18	3.50		
18-35	3.87	0.703	0.497
>35	3.33		

Since P-value is greater than 0.05, the hypothesis is accepted which means there is no significant difference between usage across age group.

After conversing with one of the subjects during the survey, we asked them for their opinions about payment apps bringing transparency to the system. The subject expressed his/her opinion as: "India is a country having people belonging to numerous religions, cultures and traditions co-exist parallelly, following one's own beliefs. India also is a country having a parallel economy, perhaps as strong as the mainstream economy. Allowing the parallel economy to exist can be detrimental not only to the country's development journey, but also to its security, and hence it is important to bring in transparency. The main challenge is to make people believe in the system and bring the majority into the mainstream. The government plays a vital role in this regard, and it is good news for Indian economy that in the year 2017-18, post demonetization, India has achieved 1 Billion \$ worth digital transactions. This is a success in the digital payment initiative through UPI, Mobile wallets, credit cards, etc. However, it is critical that the government takes further steps in increasing the transparency in the system, introduce incentives for digital payments over cash payments, increase the capacity, decrease tax harassments and start a nationwide campaign in order to achieve the target for 25 Billion \$ in

transactions for the year 2018-19. It is big time that all of India supports the government in achieving these lofty goals.”

In order to find whether there was a significant difference in usage patterns of digital payment apps, we used ANOVA (Analysis of Variance) Test. Hypothesis were formulated as follows: Null Hypothesis: There is no significant impact of residence on issues faced while using payment apps and Alternate Hypothesis: There is significant impact of residence on issues faced while using payment apps.

Table 5. Analysis on issues faced by people during transaction on payment apps based on residence

Variety	Mean	F-value	P-value
Rural	2.87		
Semi-Urban	3.07	0.323	0.725
Urban	2.94		

Since P-value is greater than 0.05, the hypothesis is accepted which means there is no significant impact of residence on issues faced while using payment apps.

To find the significance of usage patterns of digital payment apps, ANOVA (Analysis of Variance) test was used. Hypothesis were formulated as follows: Null Hypothesis: There is no significant impact of age on issues faced while using payment apps and Alternate Hypothesis: There is significant impact of age on issues faced while using payment apps.

Table 6 Analysis on issues faced by people during transaction on payment apps based on age

Variety	Mean	F-value	P-value
>18	3.00		
18-35	2.91	0.676	0.511

<35	3.67
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Since P-value is greater than 0.05, the hypothesis is accepted which means there is no significant impact of age on issues faced while using payment apps.

To find the significance difference in usage patterns of digital payment apps, ANOVA (Analysis of Variance) test was used. Hypothesis were formulated as follows: Null Hypothesis: There is no significant impact of residence on issues faced while using payment apps and Alternate Hypothesis: There is significant impact of residence on issues faced while using payment apps.

Table 7. Analysis on people's opinion about the extra convenience/ transaction charges based on residence

Variety	Mean	F-value	P-value
Rural	3.50		
Semi-Urban	3.60	0.142	0.868
Urban	3.32		

Since P-value is greater than 0.05, the hypothesis is accepted, thus there is no significant impact of age on issues faced while using payment apps.

To find whether there was a significant difference in usage patterns of digital payment apps, we used ANOVA (Analysis of Variance) Test. Hypothesis were formulated as follows: Null Hypothesis: There is no significant impact of occupation on the opinion of the people about cyber threats/crimes faced while using payment apps and Alternate Hypothesis: There is a significant impact of occupation on the opinion of the people about cyber threats/crimes faced while using payment apps.

Table 8. Analysis on people's opinion about cyber threats/crimes based on occupation

Variety	Mean	F-value	P-value
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Employed	3.36		
Student	3.44	0.988	0.381
Unemployed	4.33		

Since P-value is greater than 0.05, the hypothesis is accepted which means there is no significant impact of occupation on the opinion of the people about cyber threats/crimes faced while using payment apps.

After conversing with one of the subjects during the survey, we asked them for their opinions about cyber threats/crimes. The subject expressed his/her opinion as: "Payment apps are like a boon to human civilisation. A lot of time and effort is saved which can be used for other purposes. Standing in long queues is eliminated. If proper cyber security is set up and more awareness is created among the people about how safe online transactions are, it will encourage people to use payment apps.

IV. CONCLUSIONS

This project aims at highlighting the impact of the Digital India Initiative on the day-to-day life of the average resident of Udupi, Karnataka as well as bringing into focus, the underlying factors aiding in or hampering the initiative from reaching its sky-high expectations. As is evident from this study, the Digital India Initiative has tremendous potential with plenty of effective sub programmes capable of having society- reforming and economic empowerment implications. After careful examination of the results obtained from this study, a trend can be observed in the increase in usage of digital payment apps in India. Digital transaction apps really came into their own after demonetisation had taken its full toll. The convenience of having funds and transferring them whenever required, via digital platform and web services was realised only when the entire nation was recovering from the aftermath of the demonetisation scenario.

Leading telecommunications service Corporation, Reliance Jio's contribution to usage of digital

payment apps has also been immense and needs to be mentioned. Jio has completely revolutionized the entire high-speed data scene in the Indian market, with its affordable and reliable services. With 24x7 access to high speed web services, people have now started to accept, adopt and trust digital transaction means. However, it is yet to be determined if this is just a ripple effect of yesterday's demonetization scenario or if the tides have indeed turned for good in favour of usage of digital payment apps and methods.

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