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# Impact of Determinants of Payment Bank on Cashless Economy in India: An Empirical Analysis

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**ABSTRACT**

This paper examines the contribution of payment banks as new banking model to the cashless economy. The study about the cashless economy is important in emerging or developing countries where many factors become hurdles to cashless economy. The main reason for conducting the research is absence of experimental exploration with respect to the connection between the payment banks and cashless economy. In this Research Study, the survey done on 460 respondents from different areas and profile like below poverty line (BPL) people; who live in rural region of the country, work in unorganized sectors, remote area, the outcomes proof that the factors of payment bank like banking model, technological awareness, customer security, cost of payment and growth of infrastructure were found to have a solid critical relationship with the cashless economy. This finding will help to other developing nation's future towards cashless with the help of payment banks.

***Keywords:*** Payment Bank; cashless economy; online banking; financial inclusion; emerging economies; developing countries.

## 1. Introduction

The world is moving fast toward a cashless economy and becoming a new source of financial inclusion and financial service penetration. The Emerging economies like India trying to achieve cashless economy targets but there are many challenges to achieve this target (Hasan, Atifaman and Ali, 2020). In this context, India has taken many initiatives and one of the initiatives is payment bank a new banking model. The world talking about financial development that promise of delivery of the fundamental financial services like credit, investment, bank transfer, security and Equal Monthly Installments (EMIs) to the Below poverty line (BPL) and small earning groups at such cost, that they can afford is the major objective of financial inclusion (Sarma & Pais, 2011; Amilan & Aparna, 2021). The year 2015 witnessed the introduction of the Digital India Movement. From this year a huge improvement in economies through digitalization took place & making freedom for cashless settlement every

minute of every day (Chao, 2019; Saura, 2020).

The emergence of Payment Banks in India has disrupted the traditional banking sector by providing a more accessible and affordable alternative to basic banking services. The ranges of services offered by payment banks are deposits, transfers and bill payments to customers without maintaining minimum balance. That's why they have become an important player in the online payment network system in India that contributes towards the cashless economy and also encourages the government towards the same direction.

Besides of payment bank, online payment system in India was fueled by the Indian government through demonetization campaign in 2016, that main motive was to remove black money from the economy and promote transaction without cash. This initiative has led to a significant increase in the number of digital transactions in the country. Furthermore, the government has also launched several initiatives, such as the Digital India program, to promote digital literacy and increase access to digital services.

As other developing countries facing problems to increase the cashless payment system in their economies similarly India is also one of them and the basic reasons are those people who are living in that places where services are limited as BPL people; who live in rural region of the country, work in unorganized sectors, remote area. For the solution of this problem, Indian Government and Reserve Bank of India (RBI) decided that the comprehensive financial services never will be limited for small business and low-income household. In September 2013, the RBI established a council that was supervised by Dr Nachiket Mor to suggested measures for accomplishing monetary services. This Council had submitted its statement to RBI in first month of 2014 with the main suggestion to introduce payment bank as a specialized bank to cater small business and low-income families with the target that each resident of India can have a global bank account in a secured technology- driven environment by January 1, 2016. In 2015, Following 11 entities were licensed as payment banks (RBI, 2015).

Table 1. List of Licensed Payment bank

| S.No | Licensed Payment bank | S.No | Licensed Payment bank |
|---|---|---|---|
| 1 | Aditya Birla Nuvo Limited | 7 | Reliance Industries Limited |
| 2 | Airtel M Commerce Services Limited | 8 | Shri Dilip Shantilal Shanghvi |
| 3 | Cholamandalam Distribution Services Limited | 9 | Shri Vijay Shekhar Sharma |
| 4 | Department of Posts | 10 | Tech Mahindra Limited |
| 5 | Fino PayTech Limited | 11 | Vodafone m-pesa Limited |
| 6 | National Securities Depository Limited | | |

Here are some of the payment banks in India and their contribution towards promoting a cashless economy:
*Paytm Payments Bank:* Paytm Payments Bank was launched in 2017 and has been one of the leading payment banks in India. It has contributed significantly towards promoting a cashless economy by introducing various digital payment solutions such as Paytm Wallet, UPI, and BHIM (Bharat Interface for Money) UPI. According to a report by Paytm Payments Bank, the bank has witnessed a 700% growth in UPI transactions in the last two years, which shows the increasing adoption of digital payment methods among its customers. (Source: Paytm Payments Bank Annual Report 2021)
*Airtel payment Bank:* In 2017, The Airtel Payment bank was introduced as one of the important payment banks in the payment bank Industry. The bank launches different digital payments options to customers such as Airtel money, UPI, and Bharat QR to contributing in favour to encourage cashless economy system in India. According to Airtel Payment bank Annual report, the bank has achieved a 60% growth in the online transaction in the last year. (Source: Airtel Payments Bank Annual Report 2020-21)
*Fino Paymnet Bank:* In 2017, Fino payment bank was also introduced and it also provided different platforms of digital payment methods to its customers. The bank encourages cashless economy by launching different online payment such as UPI, IMPS (Immediate Payment Service) and Aadhaar-enabled payments. According to a report by Fino Payments Bank, the bank has witnessed a 76% growth in digital transactions in the last year. (Source: Fino Payments Bank Annual Report 2020-21)

These are just a few examples of payment banks and their contribution towards promoting a cashless economy in India. However, it is important to note that the contribution of each bank may vary and may also depend on various factors such as customer base, geographical reach, and marketing strategies

At present 2022, the list of payment banks that operate their functions viz. airtel, India post, fino, jio, paytm, National Securities Depository Limited (NSDL) are active. Aditya birla and Vodafone m-pesa Limited are defunct payment banks but the banks that are working on a new model of accepting a restricted deposit up to INR 200000 per customer without implying any credit hazard are called payment banks. These banks can open savings and current accounts, can provide most banking operation facilities but not provide loan or credit cards and payment banks can acknowledge demand deposits limit is 0.1 million, provide settlement services, payments through mobile and supplementary banking facilities are automated teller machine (ATM) facilities, debit cards, online banking and Litigation financing exchange. Technology is the most significant element on which payment banks are working and applications that can be handily utilized through smart mobile phones to interact with clients. Thus, customers can be connected with the banks 24×7 from any location. Government of India and RBI had also taken number of steps to create awareness about its Digital India Movement and payment bank financial services in all part of the country.

This way, the study signifies the effect of payment banks on the cashless economy. The Indian economy is a big comprehensive economy of the world. It includes various economic strata of different financial aptitude. Small limit banks like payment banks with online presence are the need of the hour to establish effective financial inclusion. Without a cashless economy effective financial inclusion cannot be assured. A complete cashless economy means when both the user from urban and rural will use online banking services without any fear freely and that was only possible when online payment transactions are economical , easy payment system , simple and safe , instant information etc .ATM Services are most preferred online services which were used by urban customers and still they are worried about using other online payment modes like internet and mobile banking but this insight is changing easily of web accessibility (C. Choi, 2010).

Internet or online banking is the main source to provide the path for sustaining cashless economy (Himanshu & Rashid, 2020). The declaration of the Payment Bank model through the RBI was an automatic boost step towards online payment system by providing banking services to all and it made the bank to come at doorstep and all banking services in everyone's hands, many organizations and scholars have written on this subject matter as.

To use banking services, it is necessary to use the technology to enable the customers at their own comfort. Applications of mobile banking that make banking services very easy and comfortable will add the number of usages of banking services (Eriksson and Nilsson, 2007). For online banking usage bank have to develop that type of technology interface which can be easy to learn for operating (Roy, Dewit and Aubert, 2001; Saadé and B. Bahli, 2005) Easy to operate and be useful for the customer (Rriksson, Kerem 2005; Nilsson, 2005).

Information is a highly serious matter for customers while doing any financial services therefore security is the major concern while the customer looks before accepting financial technology and online banking needs an effective way and process to make survives safe (Hutchinson and Warren, 2003; Ula, Ismail and Sidek, 2011). Safety and security that provide privacy to customers will provide a positive image of internet banking and customer commitment (Casaló, Flavián and Guinalíu, 2007).

The proposed specialized banking can be seen as a medium to accomplish the objective of wanted financial inclusion by catering all families with essential saving bank products and small insurance, pension and investment opportunities. That's why the bank needs to use that creative and newly viable business model that also be cost effective as according to that ideology "more sales and minimum profit "leveraging system support to remain competent in the market (Reddy, 2015)

Now at this point, the paper attempts to evaluate the factors of payment bank model relevant for the cashless economy in India and also find that this model of banking will become the model for all other emerging economies in the world. As such, the investigation analyzes how payment banks dependent on some selected

factors lead to a cashless economy in India and these factors will also work or not in other similar types of countries. The arrangement of hypotheses has been drawn as in direction of research objectives, and these arrangements of hypotheses are developed in sequence to check the significant effect on the cashless economy. These hypotheses are:

*Hypothesis1*: Amendment in the banking model has no impact on the cashless economy.
*Hypothesis2:* Encouraging awareness of E-channels of payment has no impact on the cashless economy.
*Hypothesis3:* Customer security has no impact on the cashless economy.
*Hypothesis4:* Cost of payment has no impact on the cashless economy.
*Hypothesis5:* Growth of infrastructure has no impact on a cashless economy.
The remaining structure of the paper is as follows: 2) Discuss about related past studies. 3) Raveled that data collection, variable and methodology. 4) Result analysis and 5) Conclusion

## 2. Review of literature

The introduction of Payment bank by RBI as a specialized bank to cater small business and low-income families with the target that each resident of India can have a global bank account in a secured technological driven environment become the source of cashless Economy.

According to Report of RBI (2020) In India, like some other countries in the world, physical money is the traditional and popularly used transaction system. It is, notwithstanding, reassuring that electronic transactions particularly those utilizing electronic or computerized modes are quickly expanding. RBI (2020) also states that over the past six years the infrastructure growth has been tremendous in terms of hand phone subscription with growing accessibility of 3$^{rd}$ Generation and 4$^{th}$ Generation Networks even in those areas which are very far away from the cities or where most people are living commonly known as remote areas. The worldwide system of computer networks is also growing at a very fast speed in India and gives a limit of "Advanced Revolution of Digitalization". It was also mentioned in RBI (2020) Report that the number of deposit accounts in all commercial bank, "LABs- Local Area Banks, RRBs- Regional Rural Banks, PBs-Payment Banks, SFBs -Small Finance Banks and cooperative banks" has developed to 29.3 million dollars at end March 2019 in India and there were 50.30-million-dollar basic saving account as on October 30, 2019 with the help of these bank account availability will assumes a critical part in starting electronic transactions. M. Jun and S. Cai (2001) has the opinion that if reply/feedback period of serving a clients ought to be minimum then the bank can easily get the trust of the customer and make a better customer base and it is also necessary that customers cannot be able to compare between traditional bank and internet banking and payment is the combination of these two.

Sharma and Singh (2021) conducted an empirical analysis of the impact of determinants of Payment Banks on the cashless economy in India. The study found that ease of use, accessibility, trust, and security are critical factors that influence the adoption and usage of Payment Banks. The availability of multiple digital payment options, such as mobile wallets and Unified Payments Interface (UPI), also has a positive impact on the adoption and usage of Payment Banks.

To coordinate with developed world's countries, it is necessary for developing countries to implement e-government projects as their ambitious target and after this these countries are e-hype which has been very exponential since the widespread adoption of ICT Technologies (Zhiyuan, 2002; Dada, 2006). The same technology knowledge and understanding awareness variable was investigated in Nambisan, Agarwal, & Tanmiru, (1999) defined this as the technology efficiency, its benefits, future value, and cost knowledge by the users, which all are related to awareness knowledge. Bayero, M. A. (2015) investigated that awareness has direct association with financial inclusion and considers awareness of technology as an important factor for a cashless economy.

The people without having any bank account will be the major reason to become hurdle in the path of cashless less economy but with the help of payment bank it can be solve, Cashless Economy is only possible when

every citizen of India has savings accounts and payments/remittance services and payment banks have provided these too to traveler work labor force, low pay families, low-income companies, other unorganized area elements and others. Nguyen (2020) said Information technology was boost by internet and so many innovations that is available in whole world. And "online banking" (OB) proposed to reduce the utilization of physical money through making exchange digitally. C. Garau (2005) observed that before accepting internet banking most of the customers think it is expansive, slow and Risky. However, cost of banking and security has been distinguished as the major determinant of Effective execution of cashless economy and that's why payment bank model entrant in Indian banking system is a positive sign to the banking sector and definitely cost of money transfer or settlements diminish adequately for end clients (Abid, 2017). Carlsson (2004) investigated that digital India is the main concern and the financial system needs to be updated. Modern technology is the only way to update financial systems like AI, Block chain, Internet banking and smart phones that contribute to the whole financial ecosystem as e-channel and mobile phones regularly advance financial access (Jack & Suri, 2012).

Pandey (2022) focuses on analyzing the development of various types of online payment methods in India and way how the COVID 19 pandemic impact on this payment system. The Finding state that India get robust growth of 26.2% during the period 2020-2021, expanding upon a past extension of 44.2% in the former year. The study observed that after COVID-19 pandemic played a significant role in shaping this growth of digital payment. People health concern became priority and they avoid cash transaction due to fear and that will encourage usage of different modes of digital payment methods.

Gorshkov (2022) identifies both internal and external factors adding to the J-curve exponential growth in without cash payment, with external factors having a larger impact. He highlights the unique features for payment by without cash promotion in Russia, focusing the development of Russian national payment method to view point of national security and geopolitical risk factor. This centralized method, governed by the Russian Bank, motive to digitalization of finance sector and also by governed by government to ultimately boost the digital economy in country.

Muthukumaran and Haridasan (2022) analyzed that fear about security risk was found to be one of the reasons for non-utilization of online payment, this study also indicated that digital payment is a cup of tea of educated people due to their awareness and handling process, large number of people utilized digital payment special on after demonetization. Failure of transactions was the very general problem face by users, spam calls, redirect to another website, phishing pages etc. are included in security risk.

Pramani and Iyer (2023) focus on analyzing the factors or categories that influence the adoption of Payment banks by their intended customers. They identify that convenience, value barrier, easy to use factors are impediments to adoption of payment bank for small businesses and factors as low awareness, difficulty with documentation, alternate channel and lack of perceived need are impediments to adoption of payment bank for the migrants.

### 3. Data Collection, Variables and Methodology

A cross-sectional analysis survey is used as a research design. This current study analyses the banking model, awareness of electronic channels, security, Cost of banking and Growth of infrastructure as variables of payment bank. It attempts to investigate the impact of selected variables on a cashless economy. The study included a total 460 respondents as a sample. The SPSS 27 Computer application software was used to analyze the observational and basic statistical data. Hypothesis was tested by Multiple Linear Regression (MLR). Accordingly; analysis is drawn to check the connection in the given figure 1.

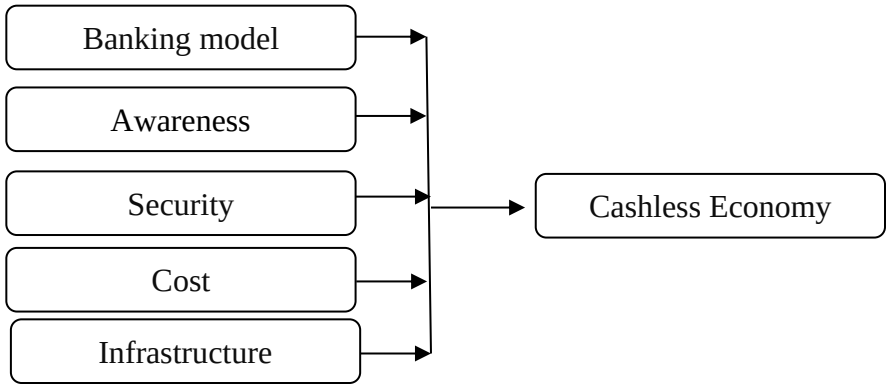


**Figure 1: Author's Conceptual Framework**

## 4. Result and Discussion

### *4.1. Reliability Test*

An overall approved normal is that alpha of 0.6-0.7 demonstrates a worthy amount of dependability, and 0.8 or more well-known an outstanding stage. The Cronbach's Alpha (CA) coefficient values in this study for the variables are .812, .707, .754, .828, .703, .700 for cashless economy, banking model, Awareness, security, cost, infrastructure in that order. From the data given, CA for every one of the factors is more than .70. This shows that every one of the factors is consistent.

**Table 2. Reliability Statistics**

| Cronbach's Alpha | N of Items |
|---|---|
| .790 | 6 |

**Table 3. Item-Total Statistics**

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|---|
| cashlesseconomy | 10.9304 | 16.047 | .225 | .812 |
| bankingmodel | 13.4522 | 8.924 | .744 | .707 |
| Awareness | 13.3587 | 12.784 | .567 | .754 |
| security | 13.2500 | 13.922 | .261 | .828 |
| cost | 13.0543 | 11.158 | .760 | .703 |
| infrastructure | 13.3022 | 11.815 | .836 | .700 |

### *4.2. Regression Analysis*

Multiple regression analysis was conducted to analysis the hypotheses as see table 5, 6 and 7 (Model summary, Anova, Coefficient). The result from the multiple regression analysis and discussion, Model Summary indicating that the Independent Variables succeed in explaining 36.02 percent of the variance in the Dependent Variable. The R Square = .360 is logical and substantial taking into consideration the idea of the review which is in which is in social sciences (Cohen, 1988). Now the involvement of the independent variable for dependent variable shows

that banking model (p = .000) , Awareness (p = .000), security (p = .039), cost (p = .000) , and infrastructure (p = .002) have a statistical considerable unique value contribution. Therefore, the null hypotheses of each variable which state that Hypothesis 1, 2, 3, 4, and 5 are not supported.

**Table 4. Model Summary[b]**

| Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|
| .353 | .40128 | 2.482 |

a. Dependent Variable: cashless economy

b. Predictors: (Constant), infrastructure, security, Awareness, banking model, cost

**Table 5. ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 41.190 | 5 | 8.238 | 51.160 | .000[b] |
| | Residual | 73.106 | 454 | .161 | | |
| | Total | 114.296 | 459 | | | |

a. Dependent Variable: cashlesseconomy

b. Predictors: (Constant), infrastructure, security, Awareness, bankingmodel, cost

**Table 6. Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 4.769 | .066 | | 72.115 | .000 |
| | bankingmodel | .358 | .026 | 1.014 | 13.811 | .000 |
| | Awareness | -.313 | .033 | -.560 | -9.582 | .000 |
| | security | .042 | .020 | .090 | 2.070 | .039 |
| | cost | -.289 | .039 | -.575 | -7.404 | .000 |
| | infrastructure | .145 | .047 | .237 | 3.093 | .002 |

a. Dependent Variable: cashlesseconomy

## 5. Conclusion

A cashless economy needs multiple resources, attention and a conviction framework for financial economy inclusion. Any variables absence out of these variables will militate against a cashless economy approach. Therefore, the research investigates the impact of amendment in banking models, encouraging awareness of electronic channels of payment, Customer security, Cost of payment, Growth of infrastructure in a cashless economy. The outcomes reveal that the framework of this concept is significant and that banking model, awareness, security, Cost, and growth of infrastructure have a huge factual relationship with the cashless economy. Among the five significant variables, the strongest contributor variable in the framework is business model, followed by infrastructure, security, cost and awareness. Overall, this research concept has establish that the cashless economy objective is influenced by the factors of payment banks and this model like payment bank will solve the hurdles for developing countries to improve the progress towards cashless economy.

### *5.1. Suggestions*

The research helps policy makers in future to be able to understand the connection between the impacts of progress in fiscal plan of action, impact of awareness of E-channels, customer security, cost of payments, and growth of infrastructure on one side and cashless economy on other side. For example, all five variables (banking model, awareness economy, Customer security, cost and infrastructure) were established to have a statistically significant relationship with cashless economy. The Government and The Reserve bank of India, payment banks other stakeholders must emphasize their attention towards updated banking business model which support cashless transactions, create awareness campaign and training programme related to various E- channel of banking transaction, to give confidence and provide security to customer while doing transactions, cost of payment should be minimum or less to increase the volume of cashless transaction, and high deployed infrastructure such as uninterrupted power supply , internet speed , ATMs , new system with modernized way of all quick payment Settlements. Hence the policy makers should not be neglecting these five variables on cashless economy because these are the major factors and significant predictor of cashless economy.

### *5.2. Limitations and future research*

Firstly, the fact that the research source data gathered from 460 respondents from one country with taking into consideration special social class and income group, and this data of information is gathered from only one developing nation as a sample area where payment bank services are available. The result of this study should be further investigated in some other emerging nations with some related demographic profile in the context of new banking model as payment bank.

Secondly, model scope of research framework is limited to discuss the relationship between payment banks and the cashless economy, which means that other factors may be, included in future research which will also provide significant results. Mainly, the result of the study has shown as an R-squared of 36.0 per cent, which definitely indicates that the model difference was not satisfactorily clarified by the elements of payment bank in the model and the contributor variable in the model may vary in future. Thus, the current finding suggested that more factors could be utilized to clarify the cashless economy. In this point of view, this study recommends future research to look at extra factors trying to clarify the cashless economy.

### Abbreviations

BPL, Below poverty line; EMIs, Equal Monthly Installments; RBI, Reserve Bank of India; ATM, Automated Teller machine; LABs, Local Area Banks; RRBs, Regional Rural Banks; PBs, Payment Banks; SFBs, Small Finance Banks; ICT, Information communication and Technology; OB, online banking; MLR, Multiple Linear Regression; CA, Cronbach's Alpha.

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