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Impact of Digital Payment System on Indian Rural Banking Customer

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ABSTRACT

The transformation of Indian banking system from the traditional brick and mortar banking model and physical check clearance banking model to digitalized banking model using CTS technology like digital payment applications such as : BHIM and UPI along with mobile banking and internet banking has disrupted the global banking scenario. India is leading the world of digital payment with information technology playing a key role in efficient banking system . Indian banks have built up strong infrastructure around contextual banking and open application programming interface to leverage their benefit. Indian banking system despite leading the global digital banking system, the rural populations of India still are facing challenges in welcoming digitalized payments system. The paper seeks to shed light on the challenges and opportunities that are emerging in India's rural banking sector with respect to digitalization also to analyze the dependency of today's banking scenario on digital literacy. The study aims to understand the perception and behavior of rural customer towards digital banking services and the methods adopted by banks in rural India.

Keywords: Digitalization, CTS technology, Information Technology, Application Programming Interface, Rural Banking, Payment Systems, Customer Services

Introduction

Along with development of digital payment technology, e-banking and beginning of digitization have been framed on a global scale. India is one of the developing nations that, by collaborating with other nations, particularly in the financial sector, has considerably accelerated the revolution of the digital payment system. Additionally, as the digital payment revolution has reached rural areas, its effects are transformational in nature and are based on examining the opportunities presented by the technological era. In the financial year 2012 it was recorded that more than 86.6% of the payments were made through cash and float of Rs 7600 crore was recorded in the economy in the year 2012-2013. Digitalization of the economy was the result of initiation of cashless economy by the policymakers.(Ravi, 2017). India being the second-largest market for telecommunications, only 6% of India's population of mobile users is digitally literate, despite the country having 25% of the world's mobile users according to a research from the World Bank. Despite the government's declaration in favour of zero balance accounts, neither transactions nor account usage are being recorded upto the level of expectations.

Main contributor to an efficient and effective banking system is Information Technology (IT) and Indian banks have been working tirelessly to reap benefits from the opportunities. However, like anything connected to the internet, there are various security risks for transactions that happen on digital platforms such as UPI and online banking, but its efforts and impact it is having is being applauded by Indians extensively. Initiating the "Digital India" campaign, Mr. Narendra Modi set course for a revolutionary change. It was predicted that, rural post offices in excess of 12000 more than 12,000 rural post offices would be connected with digitalized payment systems. Furthermore, halting the flow of black money is the main driver of digitization in India. (Venkatesh & Nandini, 2013).

Objectives of the research paper

The concept of Digital India has been embraced by the Indian government. One of the main objectives of the research paper is to know about the digitalization of the rural India its problem and prospects. Second objective was related to summarize transforming cashless economy in Rural India

The government wants to completely digitize the financial system, favouring digital transactions over more traditional ones like checks, withdrawals, and so on. However, this campaign has a number of problems, the two biggest of which are as follows: First off, India's rural infrastructure is woefully out of date. Most fundamental requirement for digital banking is internet but in majority of the rural India even the most basic form of internet is unavailable. Secondly the majority of mobile users in India's rural areas lack even the most basic knowledge of how to operate cellphones and even ATMs, and they continue to rely primarily on traditional banking methods like checks, withdrawals, and so on. On the contrary nearly 65% of mobile users in India use smartphones and are well versed with the device and it's functionality which is the major reason for success of digitalization in urban India (Bapat, 2012).

Research Methodology

Pertaining to this work the concept of descriptive research has been used. To achieve the stated objectives secondary data has been extensively used and the sampling area was concentrated to Ranchi and Ramgarh district of Jharkhand.

Digital Payment Procedure in Rural India

By including more than 500,000 participants, called as banking correspondents (BCs), the job searchers in many rural schemes have attained a new aim. The new objective is to sign up businesses and individuals for the e-economy by offering efficient training based on cashless transactions. Although every village shop is being given a \$100 incentive to accept for accepting payments through digital platform, this proves to be one of the most challenging works for BC's all over rural India. Additionally, research shows that 55,000 merchants have migrated to a digital payment platform, and a massive 25 lakh people of rural India have already signed up for digital/cashless transaction. (Purmal, Alam, & Zam Zam, 2013). However, these strategic adjustments became obvious after the Indian government scrapped old Rs 500 and Rs 1000 noted on November 8th. The Indian NPC has streamlined the alternate payment methods, USSD & UPI. Additionally, finger prints are much more convenient for villagers than other security measures, hoping it would contribute to higher enrollment rates.

Some critiques claimed that based on central government's program which focused on giving jobs to rural population of India known as MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Scheme) , out of 11 Lakh active workers, approximately 34% already have an Aadhaar-linked bank account. Also, out of 160,000 ration shops, 35% had hand machines to analyze the biometrics of MGNREGA workers, according to a review meeting held by the Kant panel. However, it has been found that young people in rural areas are much more likely to look for ways to go cashless, which is significant given the current environment. (Pritchard, Rammohan, Parasuraman, Sekher, & Choithani, 2013).

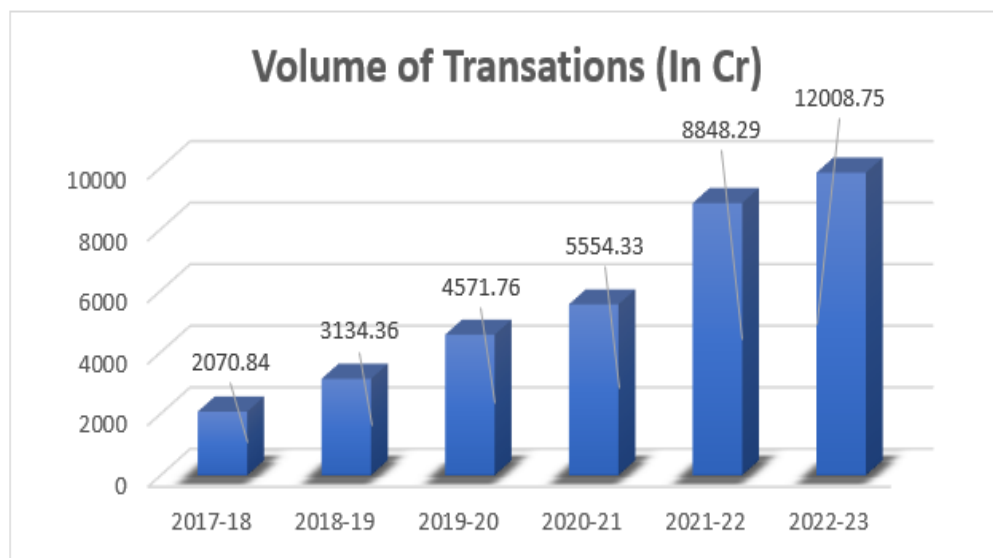


Figure 1. Rate of use of digital payment in rural India after demonetization (Source: National Informatics Center)

Figure 1, shows the significant rise of digitalization in India. By the year 2023 it can be estimated that digital users in India would see an increment by 12008.75 lakh, depicting the impact of digital payment in Indian banking sector.

According to Rajagopalan and Prakash (2013), the introduction of demonetization has resulted in significant increase in the impact of cashless payments, particularly in urban India. Figure 2 shows how the rising use of debit and credit cards in rural India has resulted in a decreased utilization rate of the digital payment method known as UPI. This in turn indicates that, in order to maintain and reap the benefits of the cashless economy, there is a major necessity for preserving the potency of transactions done digitally and developing the cashless economy notably in rural regions.

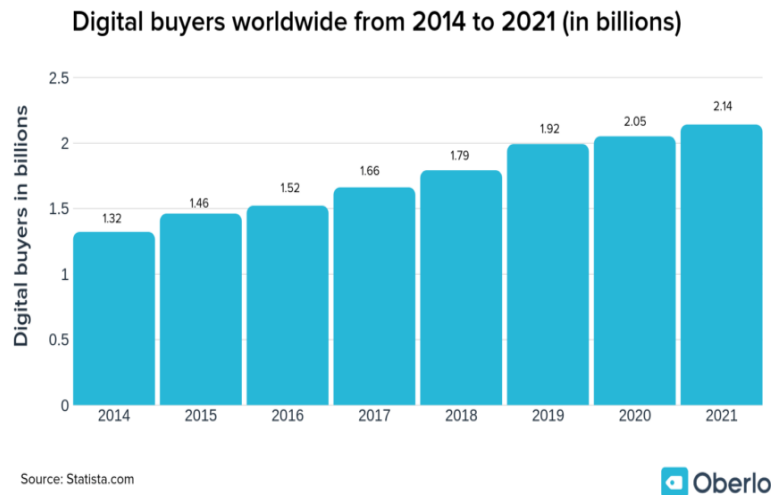


Figure 2. Number of people buying digitally in India from 2014 to 2021 (in billions)

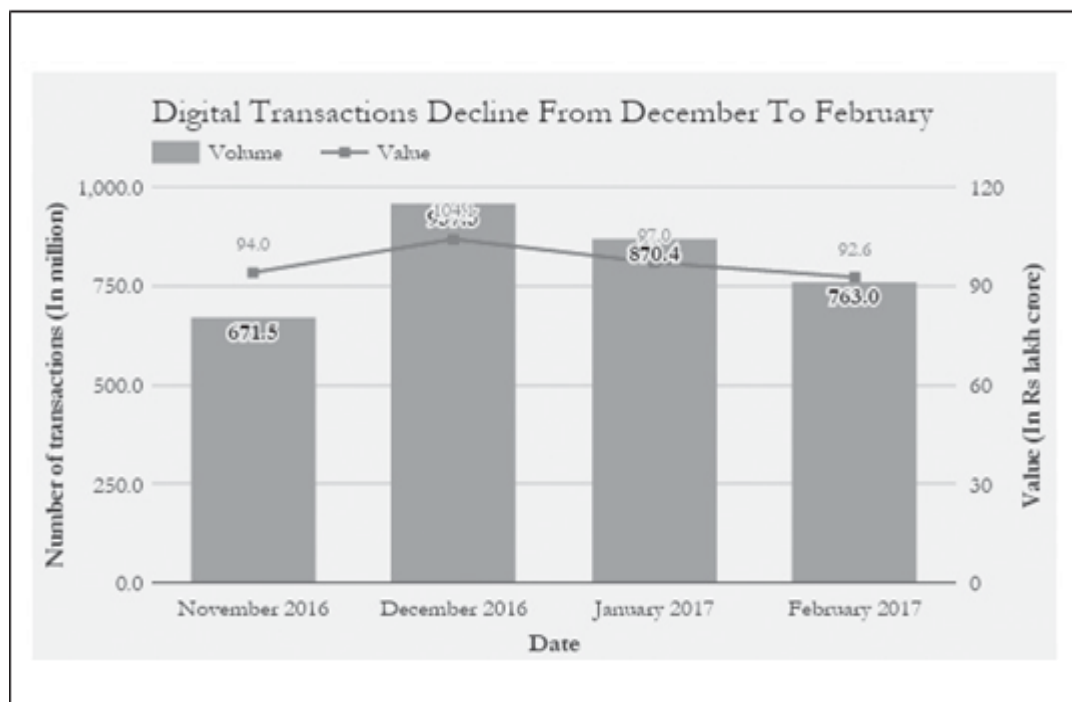


Figure 3. Decline in Digital Transactions in Rural India—January to April 2018 (Source: Waghmare (2017).

Between January and April of the day fiscal year 2018, there was a large decrease in the volume of digital transactions in rural India. This type of decrease has been caused by a lack of understanding of the rural banking system and a lack of understanding of the effectiveness of digitalization. The recapitalization that occurred after demonetization may also be to blame. With more cash on hand, even those who were digitally literate began making transactions in hard currency. Digital banking was introduced as a result of technological improvement, but lack of Understanding and poor handling ability of the digital system caused a fall over the course of the following months, totaling 763,000,000 million. (Chavan, 2013). According to Zhang, Jiang, Qu, and Wang (2013), the Indian rural sector is a crucial factor in India's development of digital payment ecosystem. In India, scrapping of old Rs. 500 and Rs. 1000 notes done in year 2016 was a pivotal event that brought about significant modifications in the dynamics of the market. In contrast to pre demonetization era, post-demonetization forecasts a considerable increase in the number of people opting for digital payment interfaces and PoS. The introduction of e-wallets, increased bandwidth for rural areas, and schemes to incentivize payment through UPI are all changing the digital payment ecosystem. (Soedarmono, Machrouh, & Tarazi, 2013; see Figure 4).

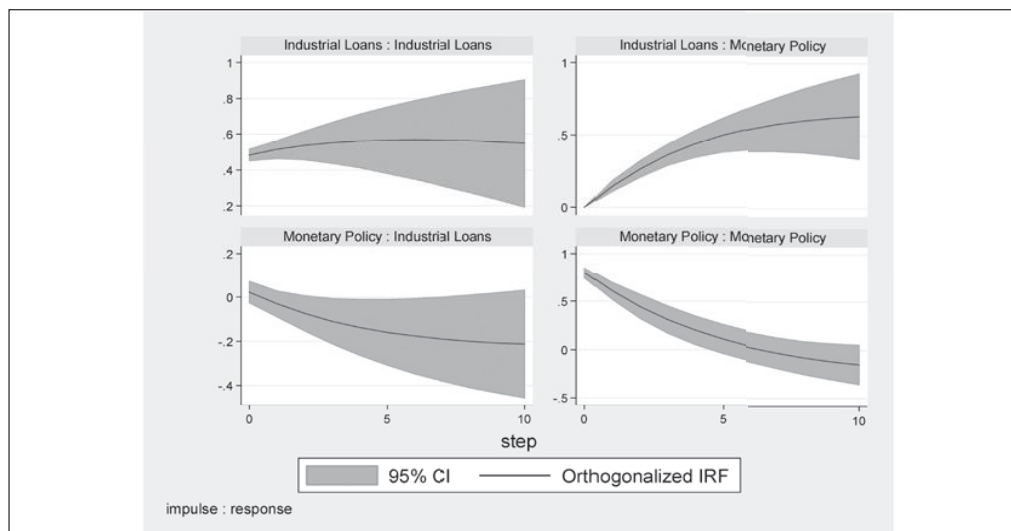


Figure 4. Pre- and Post-demonetization Impact (Source: Raj (2018))

Although the rate of utilization of digital payment technology in India has increased exponentially, the effectiveness of digitization in rural India has not increased to the same degree, which diminishes its vitality. Policymakers are developing a number of incentive programmes to provide rural India with zero balance accounts, however very few people are utilising this strategy. According to Acharya, Khandwala, and Oncü (2013), literacy and knowledge can let individuals utilize modern technology products and services improving their social along with economical part of life.

‘Aadhaar Pay’ transforming cashless economy in Rural India

The GOI has been working tirelessly to increase the use of Aadhaar Pay, which would enable users to conduct financial transactions using their fingerprints; this measure has been taken in order to inspire illiterate and underprivileged people in rural areas. Additionally, it would develop into a substitute for card and OTP based transactions in which users would require a PIN, OTP or password (Lal, Dwivedi, & Rana, 2015). In order to create a cashless payment system using aadhar pay as payment method, a seller would need the customer's fingerprint, Aadhaar number, and bank name. According to a UIDAI study quoted by the Times of India, the application of this technology is very compatible with any android-based phone, regardless of its price; the only requirement is that a fingerprint reading biometric device must be connected to it. (Choudhury, 2013). This process would guarantee that the transactions made by Aadhar pay are verified without PIN or OTP can both strengthen the security framework. Additionally, customers wouldn't need smartphones to complete transactions. The Indian government has ordered state banks to sign up 30 to 40 retailers per branch in order to develop cashless payments for clients. This has helped to heavily emphasize growth and innovation while promoting the idea of Aadhaar Pay among merchants in rural India which can play critical role in increasing the use of digitalization in the rural areas of India. The first five banks to launch the live Aadhaar Pay services with an effective promotion are, Andhra Bank, Industrial Bank, IDFC Bank, State Bank of India, and Syndicate Bank (Kumar, 2013).

Contrarily, a few other institutions are still working on adding pilots of the technology in their banking infrastructure. The major goal of the strategy is to examine the payment made through the newly developed application in order to provide merchants with incentives depending on the system's scalability and long-term sustainability. Additionally, the government is targeting to implement an incentive based model that would motivate sellers or businesses to use the biometric device, which costs Rs 2,000 (Goswami, 2016) and also trying to reduce its price. Due to hostile attackers or hackers who pose major risks to the digital payment system, the number of breaches has also increased as a result of technical innovation raising grave concerns over the use of these digital technologies.

In comparison to other digital modes of transaction, Aadhaar Pay transactions are, in terms of technology and processes, quite secure as precise location of the merchant involved in the payment can be determined when adhar pay is used as payment method, the government will immediately catch any merchant who abuses or exploits the finger-print data for personal purposes. (Jain & Natarajan, 2011). The efficiency of digital payments and a rise in customer usage rates from before demonitization are clearly shown in Figure 5. After demonetization, there are other important factors that demonstrate the need for significant advancement of the digital banking and payment system with aim to improve security and improve usability of the method.

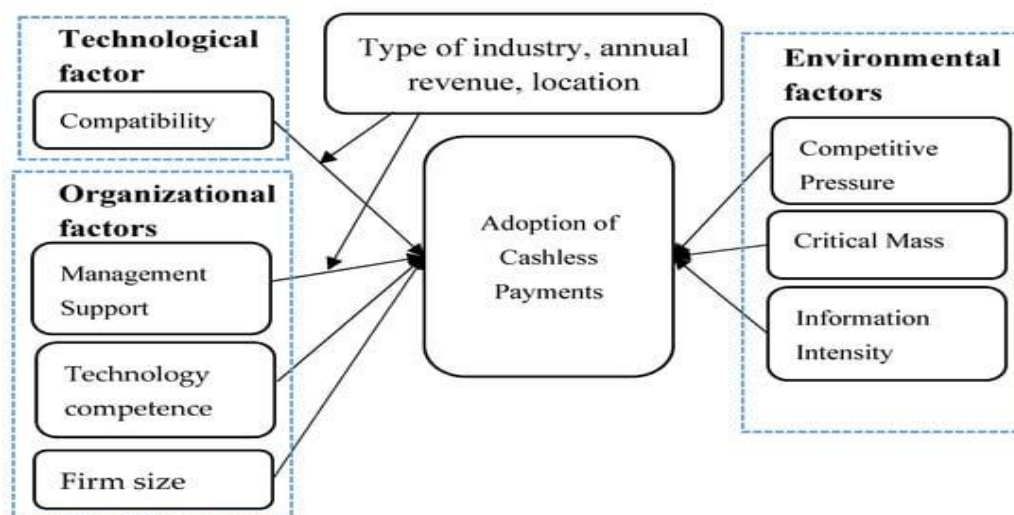


Figure 5. Factors that impact Digital Payments (Source – JOITmC)

After the Indian government's decision of demonetization in the month November 2016, the move to "go cashless" has advanced considerably. Customers, the government, regulators, as well as the bankers have all benefited greatly from these changes and the transition towards the digital world, which also dramatically increases transparency and broadens the formal economy. However, there are some restrictions associated with the 'Aadhaar Pay' system's integration in rural India. The system heavily relies on internet service to enable fingerprint-based person-to-person transfers, hence internet connectivity in remote regions continues to be a major problem. Additionally, unstable internet connectivity can harm the entire system, causing such an agenda to fail by breaking the hard trust of rural population of India. The Aadhaar Pay system has been found to be integrated with 14 banks, resulting in significant enhancement of India's economic structure. In 2009, the Indian government recognised the need for a single data repository where the large amount of personal information and biometric data of its residents would be maintained. In exchange, Indian citizens would receive an Aadhaar Number, which is akin to a social security number. To create and maintain this enormous database, UIDAI was established. The government is promoting Aadhaar Pay to bring assurance of financial transactions on the fingertips of rural population with the help of unique biometrics information of every user are registered in the database created for aadhaar, this is being done to enable impoverished and less educated individuals in India's rural areas to use digital payments technology. An Android app called Aadhaar Pay would allow businesses to do cashless transactions.

Paytm Approach in Rural India

One of the most significant barriers for the GOI and nationalized banks in India was to offer hands on services at a reasonable cost to the country's rural residents. More than 800 million people living in India's 640,868 villages, which are located in rural areas. These areas lack essential amenities including safe transportation, quality education, and internet access.

The biggest digital payments startup in India, Paytm, has used demonetization to its advantage and expanded its services throughout rural regions of India. Paytm provided sellers and businesses the chance to trade using their app and gateway for fund transfers to bank accounts of the farmers directly while the farmers are selling their produce. Additionally, Paytm collaborated with various other farming related traders to incorporate their payment schemes into their platform. To encourage the rural populace to use their services, Paytm has provided a number of loan programmes.

These programmes are aimed at farmers and can be used to buy new equipment and essentials used for farming such as tractors, fertilizer, seeds, and other agricultural supplies. Under the government's mudra scheme, these loans are typically given away without any form of security in order to promote the flow of digital money. To further increase the impact and showcase the ease of digitalization, all paperwork and payments are processed electronically. The overall number of transactions a person does on their platform determines whether they are eligible for these loans. The borrower's income pattern might also affect the payment alternatives, which range from trimestral payments to day-to-day payments. (Rangaswamy & Arora, 2016).

Paytm has also succeeded in gaining traction in places without internet access. It was made possible by a brand-new, inventive technique that allows customers to call a toll-free phone number of Paytm, enter the receiver's paytm registered phone number and the amount to be transferred, provided the customer has linked their Paytm account to their mobilephone number. This established a structure for digital payments and banking to function in India's most rural parts of India, and the National Payments Corporation of India (NPCI) later used this idea for its Aadhaar Pay app.

Rural India and Barriers for Digital Payment

Despite the significant nudge towards cashless economy provided by demonetization there still remains huge difference between Bharat the rural India and India the urban India. In order to successfully move to a cashless or less cash economy, rural communities must overcome numerous obstacles. It is past time for the rural economy to be integrated with the official economy (Paul, 2007).

Following are the important challenges proving to be roadblocks for digital banking growth in rural India.

- Literacy along with financial literacy: The minimal qualification for participation in the formal financial system is financial literacy, which is much more difficult to acquire than literacy. Even literate people often struggle to fill in bank and cheque paperwork, therefore the exchange is expensive in rural parts of India.
- Lack of Digital awareness: Less people in rural areas are familiar with computers, smartphones, and the digital world. They don't even have the fundamental computer or smartphone skills. Additionally aggravating the situation is a poor internet connection.
- Vulnerable system and the mistrust: The misconception making people even more apprehensive of a digital transaction is that if they have money sitting in a bank because they could be defrauded or prevented from retrieving it. Additionally, the frauds that take place worsen the situation.
- Selective to non-acceptance of digital payments: Despite the willingness to pay, denial by any of these few inadequate entities may soon lead to shift back towards non-digital payment mode because there are few entities available to commit transactions in rural areas.
- Inadequate number of transactions: A greater volume of repeat exchange with the same vendor might influence someone to change their payment preferences. People might be reluctant to conduct transactions with the help of the digital method in rural areas since there are fewer transactions, and those transactions tend to occur at the end of the month.
- Merchant sale: Despite the service provider's efforts to encourage merchant sales via PoS by offering a variety of discounts and schemes, adoption is quite slow.
- Inadequate infrastructure: The access to smartphones, access to internet, financial services and electricity are insufficient. Even largest national banks of India are having trouble offering the rural population the fundamental banking services. Although inclusion was increased with the help of the Jan Dhan Yojana, the majorities of the accounts created in the programme are inactive and receive slight to zero activity.
- Nature of India's rural economy: The majority of India's rural residents' requirements are met by cash transactions, thus it would be extremely difficult to promote the idea of digital payments. Because the rural economy is largely informal or unorganised, cash transactions are more efficient than digital ones.
- Poor economy: India's rural residents are still largely in poverty, and their per capita income is significantly lower than the national average. Because of this, the rural populace cannot afford even the most basic essentials.
- The key resolutions, presented by the GOI, to solve the inclusion issue of Rural Population of India:
- Improvement in infrastructure: The most important step that needs to be taken is towards a specially tailored low-cost smartphone with regional language. The Bharat Net Project's efficient and timely implementation, supply of energy to every village, every panchayat, improving the connectivity of internet by setting up hotspots and free monthly data given by TRAI, and improved banking services, particularly online services.
- Digital literacy: One of the main obstacles to the shift to a cashless economy is digital literacy. Trained group of people referred to as Self-help groups (SHGs) stimulated to spread financial and digital literacy, the Common Service Centre (CSC) run under the auspices of the Digital India programme should be expedited, and computer training in schools should be encouraged.
- Trust building: Trust building is a very slow but critical process, effective advertising tactics and the promotion of a cashless society might be helpful. 'Digi-Dhan Vyapar Yojana' and 'Lucky Grahak Yojana' are examples of incentives that are positive impact towards digitalization of rural India.
- Revamping of rural economy: As much as possible should be done to formalise the rural economy to the maximum extent possible. This can be accomplished through simple access to loans in the official sector, financial incentives for embracing the digital economy, digitalization of land records, improved JAM implementation, and other methods.

User Viewpoint in relation to Digital System

According to Ratan Watal, a previous finance secretary, demonetization caused India's digital payment systems to grow overall by 55.8% and by 25% between 2016 and 2017. RBI claims that although the acceptance level of digital payments methods have increased after demonetization in the previous fiscal year, it had decreased in the past few months of 2017. In comparison to March 2017, when there were 149.58 trillion digital transactions, there were 109.58 trillion in April 2017. The adoption rate of digital payments has increased in line with the mass capacity of digital transactions.

According to a credit card database research, more people are getting cards issued and are using debit or credit cards instead of cash withdrawals from ATMs to conduct transactions, which has an impact on the banking industry's point of sale (PoS). As a result, from 818 million transactions involving debit cards during the 2016 fiscal year, there were 1.2 billion such transactions overall in 2017. Aside from the fact that 700 million ATM transactions were made in 2016, 329 million PoS transactions were made in January 2017, a threefold increase from 108 million in the previous fiscal year.

As a result of technology advancement, consumers now have access to a wide range of easy and legal digital payment options. It was greatly aided by elements like the appearance of convenience in usage, soulfulness, and the widespread use of digital wallets as a form of payment. These important factors are referred to as architects who are essential to the adoption of digital payment solutions. It was discovered that societal stimulus, functionality and practicality, manageability and security, and the demand for performance improvement were all factors in youths of Punjab for adoption of digital wallets. Although there are a few drawbacks, including a lack of critical mass, complexity of the technology involved, premium pricing of the technology and expense of its maintenance and further advancement, and apparent risks. By Braga and Mazzon, a "Payment Mode Influencing Consumer Purchase Model" was suggested. According to this model, with the ease of transaction also came accelerated exchange. This model took into account elements like temporal orientation and separation, human self-control, and payment paradigms to create a digital wallet as a unique method of compensation. The two most crucial aspects of mobile payments research are the consumer perspective and mobile payment technologies. In Finland, Mallat researched the uptake of mobile payments by consumers. As it is active and constantly changing, the article concluded that adoption of digital payments dependent on the absence of supplementary payment options and exact contextual factors.

Difficulties of IT that Limited Digitalization in India's Rural Region

In India, the rural portion of the population makes up more than 70% of the total. Following the demonetization of currency in 2016, the government placed a strong emphasis on the use of electronic wallets, online payment gateways, and point-of-sale (PoS) portals. As a result, several businesses, including Freecharge and Paytm, launched their services in rural India, and the government also introduced services like the BHIM app. To do this, a person needs a functioning smartphone with an internet connection, an active bank account, a debit card, or a credit card, as well as access to these things. Therefore, it is clear that the Digital India campaign is being hampered by the inadequate IT infrastructure.

Technological Advancement

More than 290 million people in India lack access to electricity, which is a prerequisite for technological growth, according to a World Bank research. India has over 1 billion active mobile subscriptions in 2016, but these subscriptions do not represent individual customers and are merely a measure of the number of sim cards supplied by the telecom businesses, with over 25% of them being inactive. Additionally, about 50% of these subscriptions are offline and do not have an active internet connection. Rural India is using mobile devices more frequently thanks to recent telecom operator initiatives, however the bulk of these devices are solely utilized for calls and don't have even the most basic internet connectivity.

Technological Infrastructure

One of the most worrying aspect related to adaptation of digital banking is the technical infrastructure of rural India which fails to support the paradigm altering initiative of digital transformation. For instance, obtaining a photocopy is a basic necessity and is considered a 5 minute task in urban India proves to be quite an extensive task in rural India, it has been noted that many rural areas in India lack access to even a photocopy service, forcing residents to drive great distances to do so. As a result, a photocopy that should have cost two rupees ends up costing more than one hundred rupees, and occasionally the distance is so great that the person must miss work in order to make the photocopy, amounting to the person's that day's pay. The GOI has recognized that there are next to zero internet services available in rural areas of the country and has therefore introduced a programme called the National Optical Fibre Network with the goal of bringing high-speed internet to rural villages in India. The government claims to have connected more than 60,000 panchayats to the internet, but in actuality, there are only slightly more than 7,000. This grandiose initiative had a budget of almost Rs 700 billion.

Illiteracy

Another significant barrier to India's digital transformation is illiteracy and superstition. There were rumors that local panchayats and also religious organizations have forbid the usage of mobile phones in a certain location. Also prevent women and children from using the internet and from receiving a basic education. In a 2016 research from the GSMA, it was shown that upwards of 70% of Indian women do not have access to the internet. Additionally, they came to the conclusion that less than 38% of urban women and slightly more than 10% of rural women have access to the internet.

Recommendations and Conclusion

Enabling active innovation in infrastructure and technology for digital transformation and leverage this innovation to further increase financial presence at rural level is critical for India. The Indian government should formulate guidelines and regulations to keep the roles of central banking and digital payment independent. This law must enable independent payment regulation from central banking. The RBI's central banking function shouldn't affect how digital payments operate. Rural Customer's protection in the payment market should be the main goal of digitalization in rural banking. In other words, the consumer shouldn't be held liable for any losses caused by fraudulent transactions or system errors. The SHGs could also assist those promoting the use of digital banking systems in rural areas. Furthermore, duty of Bank mitras should be carried out by the self-help groups to give ease to the customers with lack of financial and digital literacy. This can help banks propagate the digitalization wave with greater efficiency and effectiveness.

In this approach, the expansion of the rural digital economy should result in upsurge in the amount of social infrastructures in the countryside, such as Mahila Mandals, Youth Clubs, and Panchayati Raj Institutions. However, the local population would be taught about the digital economy and financial inclusion by representatives of the line department like health workers, teachers at school and officers of village development office.

There are great chances that India's rural economy would adopt a cashless system. Another method is to work with various NGOs and educational institutions to increase consciousness of digital exchange of funds and financial proficiency among rural residents. Additionally, it can offer payment platform with more than one language support, i.e., application for mobile local languages, to make transactions simpler and garner more trust from the rural population towards digital payment.

Moreover, digital infrastructure can open new door of development in digital payment scenario in the rural area and also support and upgrade the existing circumstance.

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