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Digital payment penetration in the State of Kerala- An exploratory review Lakshmi Padmakumari¹&N Chandrasekaran²

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Abstract

Research problem: This paper explores the existing studies to understand the level of awareness and penetration of the cashless mode of transactions in India, with a particular focus on the economy of Kerala.

Methodology: This study is purely exploratory in nature aimed at reviewing major studies that focus on the level of the digital penetration in the context of state of Kerala and also to understand the major deterrents on the path

Findings: A review of the existing studies showed that the digitization drive gained momentum post demonetization and, more so during the ongoing Covid-19 pandemic. However, despite this, Kerala demonstrated limited adoption, mainly with most of the population still preferring cash mode of transactions. The studies showed that some of the roadblocks in the cashless drive are security concerns, lack of adequate IT and physical infrastructure, ease of transacting, to name a few.

Conclusion: Kerala, being a financially literate state, is yet to adopt this cashless drive. Measures need to be adopted to bring in the proper infrastructure. More awareness campaigns need to be conducted to eliminate the fear of security breaches to ensure the full-fledged adoption of the cashless campaign in Kerala.

Keywords:1 Digital payments;2 Demonetization; 3financial literacy,4 Cashless economy

1.Introduction to the study

In an economy, if the transactions are not majorly dependent on any physical form of money and which uses non-cash and digital modes of payment like credit cards, debit cards, and prepaid payment instruments, the economy transforms itself into a cashless economy. The Government announced that a TDS of 2 percent would be levied on cash withdrawals exceeding 10 million Indian Rupees (INR) mainly to incentivize digital payment. This was done keeping in mind that businesses should be discouraged from using cash as a mode of transaction. Further, to promote retailers in using digital payments at a lower cost, businesses with an annual turnover of over INR 500 million are entitled to offer low-cost digital modes of payments without incurring extra charges on Merchant Discount Rate. Further, the central bank of India (RBI) has a lower cost of maintaining cash.

This drive was preceded by the implementation of demonetization of nearly 85 percent of high-value currency notes. It has been almost four years since India's Government launched the Demonetization drive on November 8, 2016. Following this decision, the Government canceled banknotes' legal tender status of 0.0005 million and 0.001 million denominations. These two currencies were then the high value notes in circulation. Further, there were restrictions placed on the amount that can be withdrawn from the ATMs on the banknotes that can be exchanged at banks and on the banking functions of cooperative banks. Post the launch of this move, the country saw a rapid growth of e-payment startups in the country and launch Unified Payments Interface (UPI), both aimed at facilitating cashless transactions.

If we were to see whether India can gear up to the challenge of going cashless, we need to understand that only less than 5 percent of the transactions happened digitally. India remains primarily a cash-based economy. This is mainly because most of the population does not have access to the formal banking system and lack of financial awareness. This is also not helped by the conservative mindset of Indians. They prefer to spend and save primarily in cash, mostly due to the security issues concerning digital modes of payment.

Further, the informal sector account for more than half of the businesses relies only on cash-based mode of payments. A study conducted jointly by Google India, and Boston Consulting Group (2018) reported that as of 2015, 75 percent of the transactions are cash-based. In contrast, in developed countries, the use of cash was just hovering around 25 percent. It further stated that India's cash to GDP ratio is also very high (13 percent) compared to developed countries (US, UK), which usually hovers less than 8 percent.

As per the RBI estimates for July 2016, banks in the country had issued 697.2 million debit cards and 25.9 million credit cards to its customers after accounting for withdrawn or canceled cards. However, this cannot be considered on a much positive note as the number of cards in operation cannot be equated to the number of individuals holding those cards as it can happen that many customers could be holding multiple accounts and cards. Further, if we analyze debit cards' usage, we can see that 94 percent (in value) of all debit cards used at the ATMs are only to withdraw cash and not yet for making payments or any other purpose. Such a practice just indicates that the economy has hardly moved cashless in real sense.

This digitization drive's major roadblock is a lack of digital and banking infrastructure, security concerns, and a lack of financial literacy. This is further aggravated by the lack of a sufficient number of PoS, lack of access to banking facilities, especially within the rural and informal sectors. Even though the *Jan Dhan Yojana* was introduced in accelerating the financial inclusion drive, it was found that most of the bank's accounts are dormant, and 23 percent of PMJDY accounts are zero balance accounts with no transactions happening. Further, even though there is around 1.45 million PoS and over 0.2 million ATMs, accessibility is a major issue and remains unused. This issue is seen in the data; only 18% ATMs are present in rural India. World Bank's Global Findex (2017) showed that Indians are way behind using digital payment wallets compared to their developing counterparts, with only 26 percent having access to internet access. Even with internet access, the poor connectivity and electricity shortage just adds to the woes. It also needs to be noted that the penetration must reach even the Kirana (Pop and Mom) grocery stores to ensure that the economy can be considered cashless.

To accelerate this process, the Government of India has launched several initiatives. UPI (Unified Payments Interface) under the auspice of the National Payment Corporation of India was launched for the same in 2016. This was followed by setting up a number of panels and commissions whose main aim was to understand the impact of demonetization and come up with policy initiatives to facilitate the cashless campaign. Some of the groups were the commission set up by Niti Ayog headed by NITI Aayog CEO Amitabh Kant, a 13-member committee consisting of CMs of various states headed by former Andhra Pradesh Chief Minister Chandrababu Naidu and finally the Ratan Watal committee headed by former finance secretary Ratan Watal. Some of the main findings were that there is a need to set up more independent payment regulators that will come under the regulation of RBI. Further, the need to revisit the Payment and Settlement Act to include clauses concerning consumer protection and data security and privacy was understood, having the utmost importance. The advent of free digital wallets like Paytm, State Bank buddy, Oxigen, Airtel money, Amazon pay, PayUmoney, were also other initiatives taken by the Govt. of India through various e-commerce sites and financial institutions to popularize the cashless campaign (Jubair and Yakoob (2017)).

Some more initiatives taken up by the Govt of India to promote the cashless campaigns among the rural & backward areas are the following (Dominic et al. (2018)). NABARD is facilitating the regional rural banks to issue 'Rupay Kisan Cards' to promote cashless transactions. Further, free accidental insurance coverage up to 1 million is given to those who book online railway tickets. A 10 percent discount is provided to those who use fast tags for payments at toll plazas from 2016 onwards. Further to promote awareness of this digital mode of payment, the Union Ministry of Electronics and IT launched a TV channel named 'DigiShala' where 24/7, 365 days, knowledge about the benefits and various modes of cashless transactions are aired.

To ensure compliance from businesses regarding digital wallets usage, Govt. has imposed a fine of INR 0.005 million per day, starting February 1, 2020, on businesses (shops, companies, or firms) whose annual turnover is INR 500 million or more and who have not yet migrated to online payment platforms for their transactions. This clause was inserted in the Income Tax Act with the sole aim of ensuring digitization. Rupay and UPI were considered as the preferred mode of payment that doesn't have to incur merchant discount rates, amongst other low-cost wallets like BHIM, Aadhaar pay, UPI-QR code (The Economic Times, 2020).

Further, the ongoing Covid-19 crisis has also led to a surge in digital wallet usage as per a study conducted by CLSA (2020). The study reported that there had been a 3-fold increase in the total e-transactions, with over 3 billion e-transactions happening a month post-COVID-19 start. The study also highlighted that this could be seen in a positive note with the mobile penetration over 87 percent in the country.

The study reported in The New Indian Express (2020) highlighted that India's retail digital payment in volume had a CAGR of 56 percent during 2015-2019 and had a value expansion at CAGR of 30 percent. The report added that even though demonetization successfully reduced the cash transactions (8.7 percent of GDP in FY 2017), the count rose high back in FY 2019 (11.2 percent of GDP). However, the Covid-19 lockdown has led to a soaring increase in the number of digital DTH recharges from 60 to 80 percent within weeks. The UPI transactions have also increased to 1.3 billion transactions since launch.

Apart from the Govt., major players have also entered the market to explore the vast opportunities awaiting them in the cashless world. WhatsApp recently launched its first payment mode, "WhatsApp pay" that relies on UPI interface to facilitate inter-bank transfers (Sampath, The Hindu, 2019). India is the biggest market for WhatsApp, with over 250 million users, the reach and acceptability of this mode of payment are quite reassuring. However, the biggest concern is the privacy & security issue with its parent company, "Facebook" often coming under the scanner for data & security issues. The same interests rest with other global digital wallets like Amazon pay or google pay. The report recommends having a policy that will address these issues will play a quintessential role in its successful implementation and reach as the security concerns are not just limited to global wallets.

Researchers made many probes at understanding the level of awareness and adoption of cashless campaigns in the country. Rathore (2016) analyzed the different factors that determined the level of usage of digital wallets and found that convenience, brand, and utility are the core influencing factors. In another study by Sardar (2016), the author concluded that payment ease was the primary motivation in using digital wallets. A study by Manikandan and Jayakodi (2017) investigated the adoption of mobile wallets in the Chennai city of Tamilnadu. The study made similar conclusions that convenience and ease of access were the attractions in using digital wallets and that demonetization has forced people to switch to cashless mode. Painuly&Rathi(2016) also had similar inferences about the determinants and reached of digital wallets. Dixit (2017) conducted a study to understand the intensity of mobile phone adoption in Mathura. They concluded that there is a significant surge in the penetration of the digital wallet system among the people. Chattopadhyay et al. (2018) conducted an empirical study to understand the level of awareness and participation of small businesses in a cashless campaign in Uttar Pradesh. The study concluded that UPI and banking apps continued to remain the more popular mode and that retailers did engage in cashless transactions.

This paper explores the level of awareness and penetration of cashless campaigns and usage of digital payments in India with a particular focus on the economy of Kerala. In Kerala, there has been a 37 percent penetration of the internet with 98% rural usage and 79 percent urban usage (Report, 2016). Report on Data Shows Kerala is Well Ahead of Other States in e-matters (2015).

It further highlights that mobile penetration is also comparatively quite high, with around 30 million connections with a surge in smartphone usage. TRAI reports that about 20 percent of the households have broadband connections, and about 15 percent have mobile internet. Now, if we have to dissect Kerala's economic and geographical presence, Kerala is the 10th largest economy in India, with the service sector dominating the marketplace. Kerala records a GDP of INR **78,200,000** million (equivalent to US \$ 110 billion) (2018-19), with the service sector contributing about 64%, closely followed by industry (25%) and agriculture (11%). Further, Kerala boasts of being the most literate State in India. With the ongoing Covid-19 pandemic that has catapulted the need to facilitate contactless payments, it makes sense to understand the level of digitization in the context of Kerala. This study, therefore, aims to review the existing studies in this context.

1. Review of studies specific to the State of Kerala

Since this paper aims to understand the impact of demonetization and the level of penetration of digital payment systems in the State of Kerala, which has achieved 100% literacy, this section focuses on various studies that deal with the same.

According to The Hindu (2015), a report, Kerala state, has emerged 3rd in the total number of e-transactions to have happened for the year 2015, with about 546.7 million e-transactions. This surge in e-transactions is attributed to the increased mobile phone governance services (287.4 million transactions) and the issue of online certificates, tax payments, and direct benefit transfers (212.6 million). The list of e-transactions also includes informational services, utility bill payments, banking services, to name a few. The report also added that increased efforts were made to facilitate Aadhar-enabled IT services by equipping all the Akshaya centers with banking kiosks and enabling government services through them.

In a notable move, Kerala has declared the first digital State in the country on February 27, 2016 (The Hindu, 2016). With over 600 e-governance applications, Kerala has a teledensity of 95 percent and internet coverage of over 60 percent of the population, with broadband connectivity in every grama panchayat. This ensures that the needed technology is at a place to ensure maximum penetration of the cashless campaign. However, Thomas (2016) conducted a study to understand the various digital payment services offered by banks in Kerala, and the findings reported that 50% of the population still doesn't have bank accounts.

In the State of Kerala, following the demonetization drive, one of the first initiatives was an intensive training taken up by 2645 odd Akshaya citizen service centers across the State to actively promote the different digital payment platforms as well awareness amongst the merchants and the general public (Nandakumar, 2016). Akshaya centers have been designated as the nodal agency for the State's cashless drive, with a special focus on rural and semi-urban areas. The report further highlights that the campaign mainly aims to promote various platforms like cards (debit/ credit/prepaid), USSD (Unstructured Supplementary Service Data), Aadhaar-enabled payment system, UPI (Unified Payments Interface), and e-wallet. Malapuram district in Kerala was the pioneer in implementing this e-literacy campaign. Apart from Malapuram, Thrissur, Kottayam, Kozhikode, Palakkad, and Pathanamthitta districts have also followed the go-cashless campaign. The drive also aims to promote Aadhar based financial transactions that

penetrate to the household level. To incentivize the State to promote the training amongst the merchants & households, the Centre Govt. had announced awards to public service centers that promote cashless transactions. The report also points out that some of the main hesitations faced in implementing this go-cashless scheme were the issues concerning security, tax liabilities, etc. However, the merchants' increased positive response due to the convenience in transacting through the e-wallet system.

After one month of the demonetization drive, a study (Mathrubhumi, 2016) found an increased positive response to the go-cashless campaign, with eight villages acquiring the 'cashless' status. The villages are Edavanna, Thrikkalangode, Malappuram, Cheekode, Thenhipalam, and Pulikkal (Malappuram district) and Vannapuram (Idukki district) and Ichilangod (kasargod district). However, despite this penetration of the digital payments in semi-urban areas of the State, it is quite surprising to see that 91% of the rural Ernakulam is yet to reach anywhere the same (The New Indian Express, 2017). A study conducted by Kochi-based Centre for Socio-Economic and Environmental Studies (CSES) reveals despite Kochi being the first in the country to achieve universal literacy and being India's first financially inclusive district, it still has not accepted this go-cashless campaign. The study showed that only a meagre 1.6 percent of the population interviewed adapted to the cashless mode of transaction. This is even though most of the people under study were educated and financially literate. Another harrowing finding is that despite 81 percent of the respondents having access to smartphones, most found it challenging to comprehend the technical terms/jargon needed to operate digitally. This explains why the rural class is way behind with only 3 percent in the Below Poverty Line (BPL) category having accessed cashless facility ever.

In contrast, the APL is not far better off, with only 13 percent using the cashless facility. The study also reports that the penetration of digital payments amongst the underprivileged by social class, namely Scheduled Class/Scheduled Tribe cases, is very less (5 percent), and females reportedly depend less on cash to their male counterparts. Digitization has penetrated amongst the employed persons, businessmen, and students (30 percent), and the daily wage workers and farmers are still far from using these facilities (2 percent). The study finds that education plays a significant role in the penetration and acceptability of the cashless mode. Further, access to a banking facility and a smartphone is another major requirement for using the digital payment system. As per the study, 82 percent of the respondents have access to some form of banking facility, and of the 81 percent who have phones, only 28 percent have internet access. Of this, only one-third of the respondents have used it for any form of cashless transactions. One of the major hindrances to this digitization drive's penetration is the lacuna from the merchant's side in adopting the digitized mode of payment. The study reported that only 10% of the shops visited by the respondents had a PoS facility. Further, cashless transactions are more rampant on the e-commerce platform (5.2 percent).

The Kerala State Planning Board under the auspice of the State of Kerala constituted a Committee to "Study the Impact of Demonetization on the State Economy of Kerala" on November 23, 2016. The committee findings highlighted that most of the State heavily depended on cash for their businesses. Hence demonetization had a severe negative impact. The informal or unorganized sector accounted for more than half of the State's business and used only a cash-based payment system. This, along with more than 2.5 million migrant workers present in

Kerala, did not have access to digital modes of payment, and therefore, the demonetization had a severe negative impact. This also showed the lack of penetration of the go-cashless campaign to the very core of the economy. The State had a heavy concentration of cooperative banks with PACS (Primary Agricultural Cooperative Societies) only at the pyramid's bottom. The committee stated that the Govt. was also making efforts to enhance cashless transactions among holders of accounts in cooperative and scheduled commercial banks.

A case study was conducted by Paul & Pillai (2017) on digitization by the State of Kerala. The study showed about 37 percent internet penetration, with 90 percent of rural men being the primary users and 79 percent usage only from cities alone. Further, the paper also showed that as reported by the New Indian Express, Kerala is way ahead of its counterparts in terms of internet penetration, with more than 30 million connections for a population of 33 million. In terms of the reach of cashless transactions, a report (Demonetisation: In Kerala, many back cashless drive but political opposition remains concern, 2016) suggested that impressively small traders and vendors working in the retail sector, transport sectors, etc. have adopted cashless mode of transactions. The report also highlighted the favorable role of Akshaya centers in promoting the cashless campaign. Their awareness campaigns, demonstrations, and training sessions were very helpful in improving the same with a focus on various e-wallet systems like UPI, USSD, etc. The study also reported that as of December 2016, the number of digital transactions was estimated at around 30 percent.

Jubair and Yakoob (2017) did an empirical study amongst three districts of Kerala (Trivandrum, Malapuram & Ernakulam) to understand the level of awareness and acceptance of digital payments Kerala. The study found that there is a higher acceptance of digital wallets among urban people than rural Kerala. Further, males who have higher computer knowledge use digital wallets more than their female counterparts. Further, the study also found that the lack of awareness of these digital wallets is the main reason behind its low usage. Other concerns reported as per the study are lack of standardization, lack of inter-wallet transferability amongst service providers, security concerns, lack of support from banks.

In another empirical study by Dominic et al. (2018) to understand the acceptability of digital payments in Ernakulam district of Kerala. The study found that most respondents prefer cash mode of payment (58%), even though the majority have a bank account (92%). The preference for cash mode of payment is mainly due to convenience in handling cash, followed by a lack of knowledge in using digital payments. Further, the majority of the respondents feel that using cash is time-saving and easily accessible. They also argue that the cash mode of transactions reduces red-tapism. The study also reported that security concerns were the main hindrance in its successful reach amongst the people. The study also showed that people preferred online payment mode only for transferring vast sums of money.

A study by Worldline (2019), Kerala, stood amongst the top 10 states with Kochi amongst the top 10 cities to have implemented digitization by having the highest number of transactions during the second quarter of 2019.

A study by Sujith et al. (2019) aimed to investigate youth's perception towards mobile wallets in Thrissur district of Kerala. The study found enough awareness about the mobile wallets amongst

the respondents, and they are majorly using it for bill payments. Male, educated respondents were found to have used mobile wallets more than their female counterparts. The study found that security concerns, network issues, and non-availability of infrastructure were the main roadblocks in the cashless campaign.

Cashless campaign & MFIs:

The impact of IT in the context of microfinance institutions is another important aspect to be considered. It has also been documented that advent of information technology has helped in better penetration and reach of microfinance services. Issue of smart cards, modified ATMs etc. are some of the ways in which banks are able to provide financial services without having to incur the cost of maintaining physical branches (Bhatia & Kiran, 2018).

The demonetization drive had initially crippled the activities of the functioning of NBFCs-MFIs as major transactions are through cash and the sudden announcement made the lending activity and loan collections come to a standstill. (Sadashiv, 2016). Even though the infrastructure needed for digitization is in place in the form of smart phone enables cash transfers, transaction cost and lack of awareness were the two main reasons for its lower penetration (Sadashiv, 2016). Another study noted that more than 60% MFIs have gone the cashless way for its loan disbursements for better operational efficiency, through NEFT/IMPS in the fiscal year 2017 Other preferred mode of payment for the MFIs are Aadhar based Bridge system, Aadhar enabled Payment system etc. The cashless campaign forced MFIs to switch itself to the digital payment mode for sustenance. However, infrastructure, connectivity issues and the fact that for a MFI client, both income and expenditure is via cash makes the digital divide wider (TOI, 2017).

In the context of Kerala & MFIs, a study on 228 Kudambasree, a SHG across the 14 districts of Kerala, found that even though ICT measures have helped women get entry into IT enabled job opportunities as well as better provide services, inadequate resources, sustainability issues, delay of payment, technological obsolescence is a major hurdle in its progress (Chandrasekhar &Prakashm, 2010). Though this study is dated about a decade ago, it is found to be still relevant as our discussions with the experts confirm the same.

From the above works, it may be noted that even in one of the leading states with the highest literacy level, non-cash based digital payment has not been gaining acceptance as one would have expected to be. The main reason is the lack of adequate infrastructure, inability to understand security protection, heterogeneous socio-economic structure, and people's behavioral traits. Despite many environmental shocks, the economy had to undergo due to demonetization and pandemic, namely COVID 19.

2. Conclusion

This paper is an attempt to explore the existing studies that investigated the level of awareness as well as penetration of cashless mode of transactions in India, with a special focus on the economy of Kerala. A review of the existing studies shows that the drive to facilitate digitization gained momentum post demonetization. There was a surge in the use of payment modes with increased awareness and interestingly more among women than their male counterparts. However, the momentum went to a standstill with poor low-income people still preferring cash over cashless modes. Cash transactions are always favored among agriculturists and SMEs. The

ongoing Covid-19 crisis has also improved the use of digitization with people having to stay indoors and hence have to depend on the contactless cashless mode of payment for personal and business requirements, especially in non-rural areas. Kerala, being a financially literate state, is yet to adopt this cashless drive, mainly due to security concerns, lack of adequate IT and physical infrastructure, ease of transacting, etc. to name a few. Measures need to be adopted to bring in the adequate infrastructure, and more awareness campaigns need to be conducted to eliminate the fear of securitybreachesto ensure the full-fledged adoption of the cashless campaign in Kerala.

The conclusions are important for the following reasons mainly for policy makers:

1. The segment to which cashless transaction to be focused. Though the receipts to poor, rural agriculture and allied sector and services seem to be fine, the payment from this segment is unlikely to gain momentum. This is mainly because of behavioral traits and small transactions which they enter into is not widely supported.
2. The policy makers may not if they have to push payments as well, then they may have to drive awareness programmes at the grassroot level among the mobile phone users and proliferate use of debit / payment cards. Further, receiving parties like shops and people who receive payments (P2P transactions) must be encouraged. Again, this requires promotional drive.
3. It may be relevant to prioritize the segments in which the promotion of cashless transactions is to be increased. There are certain segments it can accelerate once initiation is done while some segments need push. Policy makers may have to prioritize the same. The success in Kerala may help in better adoption in other states in India as well.

2.1.Scope for future research

This study is purely exploratory in nature aimed at reviewing major studies that focus on the level of the digital penetration in the context of state of Kerala and also to understand the major deterrents on the path. One can extend the study by doing a primary study by surveying district wise, amongst different sectors the current level of penetration.

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