International Journal of Humanities and Social Science Research
www.socialsciencejournal.in
ISSN: 2455-2070
Received: 21-02-2022, Accepted: 08-03-2022, Published: 23-03-2022
Volume 8, Issue 2, 2022, Page No. 39-45

Transition to a cashless economy: A case study of Dimapur city

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Abstract
Cashless or digital transactions play an important role in the development of commercial cities. Dimapur is one of the major commercial hubs of North East India and the main commercial centre of the state of Nagaland. Trade transactions between Nagaland and the rest of India are mostly carried out via Dimapur. Over the years commercial activities have been rising in Dimapur. Thus, Dimapur becomes a natural choice to make a gradual transition to a cashless economy. This paper assesses the prospects and progress of Dimapur in transitioning into a cashless economy and also identifies the advantages and challenges involved in the process. A survey was conducted using two questionnaires for this purpose: one designed for any resident of Dimapur and the other specifically designed for the goods and service providers of Dimapur. Based on the responses to the two questionnaires and secondary data from reliable sources, this study concludes that there is a high prospect for Dimapur transitioning into a cashless economy and there is a rising and encouraging trend in cashless transactions among the people. The major challenge detected in this direction is average internet and banking services.

Keywords: cashless economy, transition, Dimapur, digital transactions

Introduction
It is usually the main urban centers in a state that play the pioneering role in the transitioning of the state's economy into a cashless economy. Dimapur is the largest city in Nagaland with an area of 927 square kilometers and a population of 378,811 as per 2011 census. People of mixed ethnicity live here with the Nagas being the dominant part of the population. Many people from other parts of India have migrated to Dimapur in search of livelihood. Dimapur also sees a lot of migration from other parts of Nagaland. One of the main reasons behind this is the urban and commercial character of Dimapur. Dimapur is described as the gateway of Nagaland and the state's commercial nerve center. It is the only plains area of an otherwise hilly Nagaland. It is the only district in Nagaland which has a railway station and an airport. Easy connectivity to the district also makes it one of the important ones in Nagaland. Thus, it is expected to play a pioneering role in the transformation of the state's economy into a cashless one.

Cashless economies are those in which transactions are carried out digitally through the likes of net banking, mobile banking, digital wallets, debit and credit cards etc instead of traditional means of cash or coins. Cashless transaction systems are an important feature of a smart city. To transition into a cashless city, a city needs support from technology partners, Fintech companies and banks. The spread of internet connectivity and banking facilities can make the transition process smooth. Since in many cases concerns have been raised about security of cashless transactions, security frameworks against hacking and other possible malpractices also need to be upgraded constantly to facilitate a smooth transitioning to a cashless economy. Thus, the transitioning into a cashless economy is not investment light. It is, however, worthwhile for a city to invest resources to facilitate this transitioning process as cashless payments have many advantages such as reduction in errors, crimes, reduction in processing costs, promotion of business, higher tax compliance etc. A study conducted by Visa in one hundred cities in 2017 showed that the benefit and revenue from digital transactions contribute an estimated 3 per cent to the city's individual GDP (VISA, 2017). However, it is not just the provision of the necessary financial and technological infrastructure that can help an economy to make this transition. The success of this process also largely depends upon the attitude of the people of the city. The Indian market is still accustomed to cash transactions, in order to transform the Indian market to a cashless one, all the important market players i.e. consumers and retailers are needed to play their part properly (Mahanta & Kalita, 2021) [2].

According to the Reserve Bank of India's Annual Report announced on 27Th May, 2021, the value and volume of banknotes in circulation has increased by 16.8 per cent and 7.2 per cent respectively during 2020-21. This is higher than the increase witnessed during 2019-20. In 2019-20 value had increased by 14.7 per cent and volume had increased by 6.6 per cent. Except for a dip in the Financial Year 2017 which followed the demonetization drive undertaken in 2016, the overall trend has been one of increase in banknotes value from 2015 to 2021. Thus, the dependence of the Indian economy on cash was not even affected by the COVID 19 pandemic. India is a majorly cash driven economy where people prefer to carry cash instead of cards however India is moving

towards "less cash economy" (Maurya, 2019) [3]. One of the main objectives of the Digital India programme, launched in 2015 was to gradually work towards this transformation. Towards this aim, infrastructural developments in the area of wider spread of internet connectivity has taken place and even the relatively underdeveloped North Eastern region of India has witnessed a change in transaction modes. Nagaland has taken some impressive steps towards the spread of e-governance. It is the first state in India to introduce e-governance. Among the states of North East India it is the first to start the pilot project for National Information Infrastructure. It is also the only state in India where the State IT Department runs the State Data Center without engaging private Data Center Operators. Dimapur being one of its most important districts is expected to have a developed IT infrastructure. Dimapur district is connected with Power Grid Corporation of India Limited (PGCIL) 1 Giga Bytes per second (Gbps) link and 34 Mega Bytes per second (Mbps) BSNL LL as backup link. The same source states that data transfer speed in National Institute of Technology (NIT), Dimapur is 1 Gbps, in SETAM it is 100 Mbps and in CISHR it is also 100 Mbps (Nagaland State Monthly Progress Report, 2021). There are prominent private broadband service providers such as Symbios Creations Pvt. Ltd., Ai Connect, Airtel Gallery, Jio Gigafibre etc providing internet connectivity in Dimapur apart from mobile data connectivity provided by various cellular providers. As per SBI Regional Business Office, Dimapur, as on 30th June, 2017, there are 28 banks with 177 branches operating in Nagaland out of which around 33 per cent are located in Dimapur. Lead Bank Office, Dimapur deals with 61 branches in Dimapur. All the popular bank branches are equipped with ICT hardware to run their operations with minimum failure. Technology is the backbone to this banking revolution (Menaka, 2019) [4]. However ground realities are usually different from what we see on papers. In a survey conducted to test quality of mobile internet services in Nagaland by Dr. Parimal C Bhowmick of Immanuel College of Dimapur, only 2.9 per cent of the respondents described the service as excellent, majority (35.6 per cent) described it as average while 25.3 per cent described it as poor (Bhowmick, 2020). An appeal was made by Dimapur Naga Students' Union on 11th January, 2021 to all the mobile network operators to ensure quality internet service amidst the online examinations (Nagaland Post, 2021). The necessity to make such an appeal in itself may be taken as a proof of unsatisfactory and fluctuating data speed.

Review of Literature

Manoj Narayan K.S, Linmer Jaseentha Souz.S, Nistul Raj Muraly (2018) in their study Transition Towards Cashless Economy: A Study on the Perceptions and Expectations of People of Kottayam District of transition in Kerala found that although the residents are only moderately engaging in cashless transactions, but they recognize the benefits of cashless transactions and expect a better future for cashless economy.

Dr. B. Menaka (2019) [4] in her study Electronic Payment in Cashless Economy: Problem and Prospect identified financial exclusion, limited infrastructural facilities, lack of education, insufficient access to technology, large population of India and resistant mind set to be major hurdles standing in the way of Indian economy becoming cashless.

C.E. Rudresha (2019) in his study Cashless Transaction in India concluded that in comparison to developed countries the state of digital payment in India is still very poor. He suggested that financial literacy should be extended especially to rural areas and reduction in charges of digital transactions should be made.

Zaheer Allam (2020) in his study The Forceful Reevaluation of Cash-Based Transactions by COVID-19 and its Opportunities to Transition to Cashless Systems in Digital Urban Networks have identified a surprising link between the pandemic and the transition process to a cashless economy. He found that the potential contamination of hard currencies has given rise to a greater preference for cashless transactions. The option to use cashless platforms is also being encouraged in least developing economies.

Gabriel Chodorow-Reich, Gita Gopinath, Prachi Mishra and Abhnav Narayanan (2020) in their study Cash and the Economy: Evidence from India's Demonetization which is based on cross section data from different districts of India stated that districts which experienced more severe demonetization had relatively adopted alternative payment technologies faster among other things. However, they also found that during demonetization cash declined but the sum of cash and checking deposits remained stable from which they concluded that in modern India, cash still is an important facilitator of transactions.

Deepshikha Mahanta and Gourab Jyoti Kalita (2021) [2] in their study Awareness and Perception of Medium and Small Retailers towards Cashless Transactions in Guwahati found that a high percentage of the retailers are aware and offering cashless transaction facilities but facing hurdles in form of internet traffic and high transaction costs while conducting such transactions.

Research Gap

Although there are an extensive number of studies made on the subject matter of transitioning into a cashless economy for various parts of India, none has been undertaken for Dimapur. Also most of the studies made so far attempt to either approach the matter from the perspective of the residents of the region under study or from the perspective of the sellers from the region. This paper attempts to simultaneously evaluate the preparedness and perceptions towards transitioning into a cashless economy from the perspective of both the groups of people who represents the two parties in transactions: the consumers and the sellers, in order to have a better understanding of the challenges involved and also for identification of advantageous edges which Dimapur might have that can be exploited to speed up the process of transition.

Objectives of the Study

- To examine the extent of usage of cashless transactions among the people.
- To examine the progress made by Dimapur towards this transitioning process.
- To examine the advantages and challenges involved in this transitioning process.

Research Methodology

The present study incorporates the use of both primary and secondary data. The primary data was collected through two sets of questionnaires: one generally designed for any resident of Dimapur and the other specifically for the providers/sellers of goods and services in Dimapur. This was done with the objective of getting the perspectives of both the consumer class and the selling class. For the first questionnaire data was collected through simple random sampling whereas for the second questionnaire purposive sampling technique was applied. The primary data was collected in online mode through Google forms as well as by physically covering different localities of the city for the first questionnaire and for the second questionnaire data was collected entirely by physically covering different localities. The number of respondents for the first questionnaire is 200 and the number of respondents for the second questionnaire is 100. The data was collected during the time period of December, 2020 to March, 2021. Secondary data has been collected from reputed journals, local newspapers, private websites and government websites.

Universe of the Study

The study is based on data collected through two questionnaires. For the first questionnaire the universe comprises the population of Dimapur which as per census of 2011 is 378,811 and projected to be 524,142 in 2021 as per NIC, Ministry of Electronics and Information Technology. For the second questionnaire the universe comprises all the goods and service providers of Dimapur.

Tools for Analysis

The primary data have been analyzed by using simple percentage analysis and have been represented in tabular form and a multiple bar diagram.

Limitations of the Study

The study is based mainly on primary data which was collected during the period of December, 2020 to March, 2021 when Dimapur, along with the rest of India was under the influence of the first wave of COVID19. There is a likelihood that cashless transactions carried out by the respondents during the period were more than usual because of the influence of the pandemic. So data collected on volume of cashless transactions, attitude towards such transactions etc may also reflect this influence. Also the data collected for the second questionnaire had to be restricted to 100 instead of the targeted 200 as it became increasingly difficult and unsafe to physically cover locations after March, 2021.

Results and Discussion

Composition of the Respondents

In a study involving perspectives of the people of a region it is important that the sample represents the population of the region without any biases whether related to sex, age, educational qualification etc. Hence, a brief outline is provided below on the composition of the sample which supports this study to emphasize that there are no intentional biases in the sample.

- **Sex Composition**: 57 per cent of the respondents are male and remaining female.
- **Age Composition**: 4 per cent of the respondents are in the age group of below 18, 76 per cent of the respondents are in the age group 18 to 30, 18 per cent in the age group of 31 to 60 and 2 per cent in the age group of above 60.
- **Occupational Composition**: 17 per cent of the respondents are service holders, another 17 per cent are businessmen/ businesswomen and the remaining falls under a miscellaneous group of self employed, mixed income earners etc.
- **Educational Composition**: Majority (41 per cent) of the respondents are graduates, followed by post graduates (25 per cent), HSLC/HSSLC (25 per cent) and 9 per cent are respondents with educational qualification below HSLC.
- **Categories of Goods and Service Providers**: Majority (70 per cent) are people working in shops and malls and the remaining 30 per cent were representatives of hotels and restaurants, hospitals etc operating in Dimapur.

Analysis of Primary Data

The analysis of the primary data is presented in two sections corresponding to the two sets of questionnaires: The first section covers the analysis of the data collected from the general questionnaire designed for any resident of Dimapur and the second section covers the analysis of the data collected for the questionnaire designed specifically for sellers/providers of goods and services in Dimapur.

1. First Section

There are a variety of instruments available to conduct cashless transactions. But some of these instruments tend to be more popular than the others due to a variety of reasons such as familiarity, convenience etc. Although many of the respondents are probably using more than one option of cashless payment, the objective here is to find which option is more popular than the rest. The majority of the respondents (38 per cent) are found to use mostly bank cards to conduct their cashless transactions; the next popular option is Unified Payments Interface (UPI). 31 per cent of the respondents mostly use it, 21 per cent mostly use mobile wallets. Unstructured Supplementary Service Data (USSD) was the popular choice among 1 per cent of the respondents. 2 per cent uses options other than the previously mentioned ones such as Aadhaar Enabled Payment System, whereas for 7 per cent of the respondents this question was not relevant as they have never engaged in cashless transactions (Table 1).

Table 1: Option Used Normally for Cashless Transaction

Option	Frequency	
	Number of Respondents	Percentage (%) of Respondents
Bank Card	76	38
USSD	1	1
UPI	63	31
Mobile Wallet	43	21
Other	4	2
Does Not Arise	13	7
Total	200	100

Source: Primary data

Notes: The Bank Card option also covers Net Banking option.

The progress made by an economy towards transitioning into a cashless economy is partially revealed by the size of cashless transactions as opposed to cash transactions. To evaluate this aspect of progress made by Dimapur, the respondents were asked to state the current percentage of their total transactions which is cashless. Majority of the respondents (46 per cent) said it's 25 per cent or below, for 25 per cent it's in the ranges of 26 to 50, for 20 per cent it's in the ranges of 51 to 75, for 2 per cent it's in the ranges of 76 to 100. This shows that for the majority of the respondents, the majority of their transactions are still cash transactions. For 7 per cent of the respondents it was an irrelevant question as they have engaged in cashless transactions (Table 2).

Table 2: Size of Current Cashless Transactions

Size Range in %	Frequency	
	Number of Respondents	Percentage (%) of Respondents
0	13	7
25 or below	92	46
26-50	49	25
51-75	43	20
76-100	3	2
Total	200	100

Source: Primary data

Notes: In order to state their current size of cashless transactions the respondents were asked to provide a rough estimate of their average cashless transaction percentage over the past five months along with the current month.

Progress towards becoming a cashless economy is facilitated when a larger section of its population increasingly engages in cashless transactions. The respondents were thus asked to state the trend in their cashless transactions over the years. As revealed in Table 3, the majority (70 per cent) of the respondents said it has been increasing. This factor is likely to counter in the future the dominance of cash transactions over cashless transactions. 20 per cent of the respondents said it has stayed the same, 3 per cent said it has been decreasing whereas for again 7 per cent of the respondents it was not a relevant question as they have never engaged in cashless transactions.

Table 3: Trend in Cashless Transaction

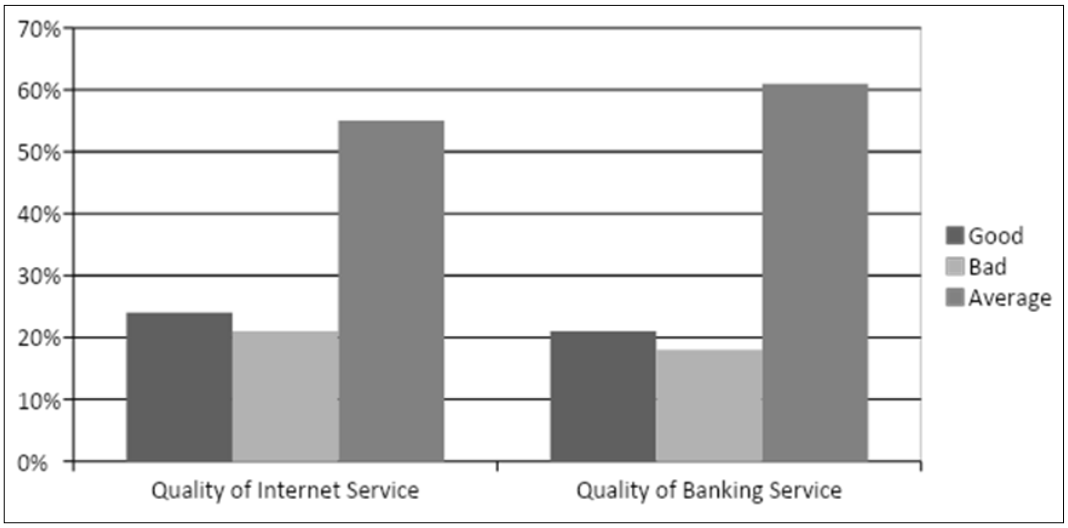
Trend	***Frequency***	
	Number of Respondents	***Percentage (%) of Respondents***
Increased	140	70
Decreased	7	3
Stayed Same	40	20
Does Not Arise	13	7
Total	200	100

Source: Primary data

Notes: In order to state their trend in cashless transactions the respondents were asked to provide a rough estimate of their trend in such transactions over the past five months along with the current month.

The dependence of cashless transactions on infrastructure is more intensive than what it is for cash transactions. Thus developed economies with superior infrastructural facilities depict a larger size of cashless transactions than underdeveloped economies with poor infrastructural facilities. To evaluate the infrastructural preparedness of Dimapur, perception of the respondents on the following points were analyzed.

Quality of Internet and Banking Service: The spread of internet and banking services has not been uniform across India. Under initiatives from the government, bank branches have multiplied in less banked areas such as the Northeast. Internet facilities are also being made widespread. However, it's not just their uniform spread which is important. When it comes to contributing towards the transitioning of the economy into a cashless one, it is equally important to maintain superior quality for these services. The respondents were thus asked to describe the quality of banking and internet services in Dimapur based on their experience. With respect to the quality of internet service, 55 per cent of the respondents described it as average, 24 per cent described it as good while 21 per cent said it is bad. With respect to the quality of banking services, 61 per cent described it as average, 21 per cent described it as good while 18 per cent said it is bad (Figure 1). Quality of banking service fares slightly better than the quality of the internet but a successful transition will demand an improvement in both.



Source: Primary data

Fig 1: Quality of Internet and Banking Service

2. Second Section

Installation of cashless payment facilities by more and more goods and service providers help to accelerate the process of transition to a cashless economy. Although the number of goods and service providers providing cashless payment facilities has been increasing in Dimapur, it is yet to be universally provided. Among the respondents interviewed, 78 per cent have provision for cashless transactions for their customers whereas 22 per cent of the respondents do not have such provisions and operate through cash transactions only (Table 4).

Table 4: Provisions for Cashless Transactions for their Customers

Provisions	Frequency
Available	78
Not Available	22
Total	100

Source: Primary data

There is more than one device choice available to the goods and service providers for conducting cashless transactions with their customers. Smartphone stood out as the most popular device for cashless transactions. Majority (58 per cent) of the respondents stated that they use smartphones for such transactions, 15 per cent use Point of Sale (POS) device, 2 per cent uses computer and 3 per cent of the respondents use other cashless transaction devices such as cheques. For 22 per cent of the respondents the question was not relevant as they do not have cashless transaction facility (Table 5).

Table 5: Device Mostly Used for Conducting Cashless Transactions

Device	Frequency
Smart Phone	58
POS System	15

Computer	2
Others	3
Does not Arise	22
Total	100

Source: Primary data

The launch of the Digital India programme in 2015 facilitated the growth in cashless transactions all over India. In Dimapur too, it seems to have made a positive difference. Among the 78 respondents who have cashless provisions, 70 of them have installed such provision after 2015 while 8 of them have had this provision prior to 2015, 22 of the respondents as stated earlier have not installed cashless payment facility (Table 6). The successful transition into a cashless economy by a region is related to similar successful transitions in other regions too. Thus, programmes such as Digital India can have major impacts in simultaneously transitioning many cities into cashless cities.

Table 6: Installation Time Period of Cashless Transaction Options

Time Period	Frequency
Before 2015	8
After 2015	70
Not Installed	22
Total	100

Source: Primary data

Although a high percentage of the goods and service providers interviewed have cashless transaction facilities, it was important to know how much percentage of their transactions with their customers were cashless. For 56 per cent of the respondents cashless transactions comprises of (1 to 35) per cent of their total transactions, for 13 per cent it is in the ranges of (36 to 50) per cent, for 6 per cent it is in the ranges of (51 to 75) per cent and for only 3 per cent of the respondents it is in the ranges of (75 to 100) per cent (Table 7).

Table 7: Percentage of Cashless Transactions with Customers

Percentage Group	Frequency
0	22
1-35	56
36-50	13
51-75	6
76-100	3
Total	100

Source: Primary data

Notes: In order to state their current size of cashless transactions with their customers, the respondents were asked to provide a rough estimate of their average cashless transaction percentage over the past five months along with the current month.

22 per cent of the goods and service providers interviewed did not have a cashless transaction facility for their customers. Although having such a facility is not compulsory, increased levels of competition among the sellers, demand from the customers, overall change in the economy and many other factors tend to induce many sellers to introduce such a facility. Thus, the respondents who did not have a cashless payment option were asked if they have any plan to introduce such a facility in the future. Out of the 22 per cent respondents 2 stated to have plans for introducing such a facility and the remaining 20 stated that they have no such immediate plans. The 78 per cent respondents who already have a cashless payment option stated that they have plans to introduce more device options for such transactions in the future. Thus overall it may be summarized that 80 per cent of the respondents have plans to either increase or install cashless transaction options, while 20 per cent have no such plans so far (Table 8).

Table 8: Plan to Increase/Introduce Cashless Payment Options

Response	Frequency
Yes	80
No	20
Total	100

Source: Primary data

Concluding Remarks

Cashless transactions are fast becoming part and parcel of modern economies and are increasingly replacing cash transactions. With prospects to boost income levels, reduce the size of black money etc the economic motivations to transition into a cashless economy are many. Dimapur seems to have the aptitude to transition

into a cashless economy. This is depicted by the high percentage of people having already engaged in such transactions, an increasing trend in such transactions, and a larger section of the goods and service providers having facilities to accept cashless payments. The Digital India programme also had a palpable effect on making cashless transactions popular and strengthening of this programme also has a high probability of facilitating the transition process. Poor infrastructure, particularly internet quality has emerged in many sections of this paper as a major obstacle. A major effort to rectify this state is needed.

Recommendations

Firstly, internet connectivity needs to improve and internet speed needs to be made stable. And this is to be ensured not only for Dimapur but other areas in Nagaland and in fact India. A person from an area with good stable internet connectivity will fail to make a cashless transaction if his/her transacting partner is from an area with unstable internet connectivity. Thus, it is realized that transitioning Dimapur into a cashless economy will not only depend upon its own internet penetration and quality but also on its penetration and quality across all regions.

Secondly, Dimapur has a young population and also has a high percentage of literate people. Thus, it is likely that lack of technical knowhow will not be a big obstacle standing in its way of transitioning into a cashless economy. But the technology in the field of cashless transactions keeps changing quickly and some may fail to adapt to such changes. This must be tackled through skill training and simplifying such transaction processes without forsaking security.

Acknowledgement

The expenditure for the primary data survey supporting this paper has been financed by the administrative body of St. John College, Dimapur, Nagaland which is also the institution the authors of this paper are affiliated to.

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