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Article

Financial Deepening, Digital Payments and Economic Growth in India: A Comparative Empirical Study

Harshita Gupta[1], Smyle[2], Aarushi Chaba[3], Sneha Bharti[4], Shreya Sheel[5]

[1]Department of Management & Commerce, Institute of Technology and Management, Dehradun, India (Affiliated to HNB Garhwal Central University), India.
Email: harshitagupta.megha@gmail.com
ORCID: 0009-0008-8467-5940
[2]Department of Commerce, MPG College, Mussoorie (Affiliated to HNB Garhwal Central University, Srinagar) India & Assistant Professor, School of Management and Commerce, Dev Bhoomi Uttrakhand University, India.
Email: smylegoyal98@gmail.com
ORCID: 0009-0002-0492-3681
[3]Department of Liberal Arts, DIT University, India.
Email: aarushichaba1@gmail.com
ORCID: 0000-0001-8772-0171
[4]Department of Business Administration, PSIT College of Higher Education, Kanpur, Affiliated to CSJMU, Kanpur, India.
Email: bharti.sneha447@gmail.com
[5]Department of Commerce, Navyug Kanya Mahavidyalaya Rajendra Nagar Lucknow, Affiliated to University of Lucknow, India.
Email: shreya.sheel01@gmail.com

Abstract: The introduction of digital financial services has transformed the manner in which financial transactions take place while has led to a significant change in Indian financial system. With the expansion of availability of banking and usage of financial services, an ecosystem of formal economy has developed which is technology driven. Financial deepening and financial services banking has led to the emergence of an important factor of economic growth. Some of the initiatives such as UPI, RuPay and various schemes for financial inclusion have supplied a boost to delivery and transactions of financial services. But at the same time, there are disparities between different regions with respect to banking development and economic growth in India. This research will be aimed at evaluating the financial deepening of eight different states of India and finding the correlation with digital payments and economic growth.

The article relies exclusively on secondary data gained from the Statistical Appendix of the Economic Survey 2025–26. A quantitative method has been applied to the analysis of transactions at the national level made with UPI and RuPay between 2019–20 and 2024–25 for comparing the evolution of digital payments. In the study, data from the same year of banks' deposits, bank credit, and GST receipts was analyzed by states in order to identify their financial deepening and economic performance, i.e., eight regions were chosen: four from the north and from the south and four from the east and from the west of the country. Financial Deepening Index (FDI) was constructed using data of bank deposits and credits. Also, the results were analyzed in comparison with the trend analysis, descriptive statistics, and Pearson correlation coefficient being applied.

While India's financial system has transformed into a largely digital ecosystem with rapid increase in UPI transactions and adoption of digital payments, there is significant variation in financial deepening across states. In terms of banking development indicator, states such as Maharashtra and Karnataka have registered higher values of banking development index, while Odisha's index value is lowest. Correspondingly, states such as Maharashtra and Karnataka have also registered higher values of bank deposits and credit, while Odisha's financial depth is lowest among the eight study states The study concludes that financial deepening and digital payment adoption together create a supportive environment for sustainable economic growth. The

findings provide useful policy insights for strengthening financial inclusion, expanding digital payment infrastructure, and reducing regional disparities in India's financial development.
Keywords: Financial Deepening; Digital Payments; Unified Payments Interface (UPI); GST Revenue; Financial Inclusion; Banking Development; Economic Growth; India

1. Introduction

Financial sectors play an important part in supporting economic progress. One of the methods through which the financial sector accomplishes this is by controlling savings, financing investments, optimizing asset use, and facilitating the development of an effective economy. An efficient financial system allows for better provision of formal financial services, lower transaction costs, and more effective performance of financial middlemen. Hence, financial deepening has become an important indicator of economic development. Financial systems in wealthy nations are more developed, thus resulting in greater investment levels, a higher degree of financial access, and better conditions for sustainable development.

Recently India has experienced significant changes in finances because of the rapid technological development and reforms initiated by the Government. The Government developed multiple programs aiming at achieving financial access goals such as Pradhan Mantri Jan Dhan Yojana (PMJDY) program, Digitial India project, Direct Benefit Transfer (DBT), and Aadhaar-enabled payment system. Furthermore, new electronic payment systems emerged in India such as the Electronic Payment Interface (UPI) and RuPay payment card.

The swift development of digital payments has not only affected consumer habits but also triggered changes in the process of formalizing the economy. The increasing number of electronic payments makes the transactions easier to monitor, reduces reliance on cash, improves tax compliance, and speeds up money transfers. The National Payments Corporation of India points to UPI as one of the largest digital payment systems that executes millions of transactions annually and helps accomplish the Indian economy boost (NPCI, 2025). The steady increase in RuPay payments shows that more native systems are used on the Indian market and aid the process of digital economy creation.

On the contrary to the positive statements, it is worth mentioning that the financial development is unequal across the territory of India. There are significant discrepancies in banking coverage, credit access, digital payments usage, and financial performance in the regions. Maharashtra, Karnataka, and Gujarat represent examples of successful regions with high banking development and numerous digital payments on the market, while other areas do not show similar advancement.

The proliferation of digital financial services has greatly benefited India's financial structure; however, all sectors of the economy do not benefit equally from that growth. There are still differences among Indian states in terms of banking facilities, credit availability, use of digital payments and general economic success. States that have progressed more in terms of industrialization, urbanization and financial inclusion have better developed banking systems and higher amounts of digital payments. These discrepancies demonstrate that the development of the Indian financial sector is still in progress and continuous attention from a policymaking perspective is needed to ensure that economic growth is balanced (Reserve Bank of India [RBI], 2024).

Financial development is typically measured by the growth in metrics like bank deposits and loans, access to credit, etc. The increase in bank deposits increases the availability of funds in the economy. Increase in bank credit aids in the expansion of businesses as well as leads to increased levels of investment, employment generation, and consumption. Thus, economic activity improves and formal financial systems become stronger with the contribution of these aspects. Moreover, in the previous years, the digital payment platforms like UPI and RuPay have contributed to the improvement of the efficiency of financial intermediation as they facilitated the making of transactions at faster pace, low costs, and in a secure way (Levine, 2005).

Another significant indicator of formal activities is the Goods and Services Tax (GST). After its implementation in 2017, GS has provided a unified indirect tax system and ensured tax compliance due to digital reporting. With businesses go on operating in formal economy, it is expected that increased use of digital payments and better penetration of banks would help in improving GST collections.

Though previous empirical research on financial development has been done, many studies focus only on the relationship between financial development and economic growth or look at the effects of digital payments on financial inclusion. However, there is a lack of research examining these different concepts at once by combining financial deepening, digital payments and the effect of GST within one framework of study. Moreover, many of the studies conducted previously have concentrated on state or country level analysis or looked at specific indicators, contributing to the overall lack of inter-country analysis using recent data. Although this creates a significant research gap, exploring the relationship between differences in the development of the banking system on the one hand and economic activities on the other hand is important.

To address this gap, the present study undertakes a comparative assessment of eight representative Indian states selected from the northern, southern, eastern, and western regions of the country.The research combines an analysis of trends in digital payment measures with comparisons of bank deposits, bank credit, Financial Deepening Index (FDI), and the revenues from the Goods and Services Tax (GST) on a state-by-state basis to shed light on the ways through which financial development contributes to economic performance and to understand regional deviations that may need specific policy focus.

Now, although the interest of researchers in the connection between financial development and economic growth is growing lately, and since digital payments are essential for financial inclusion, still not much research examining these two aspects together has been conducted so far.

A substantial number of studies focus on either national aggregate data or a single indicator of financial development, for instance, either the use of banking products or the use of digital payments. There is scarce comparative evidence on how financial development, digital payments, and GST have jointly affected selected states in India. Many studies that were undertaken to examine the phenomena in question have relied on the data collected prior to the pandemic, which makes them not valid for the current analysis due to possible significant changes that happened in the area of digital finance in India.

The present study contributes to the existing literature by providing an integrated assessment of financial deepening, digital payment adoption, and economic performance using recent official data. Unlike earlier studies that primarily focused on individual indicators, the present research develops a **Financial Deepening Index (FDI)** based on bank deposits and bank credit to compare the level of financial development across selected states. This study also includes an analysis of the growth of digital payments through UPI and RuPay transactions when compared with regional financial progress and GST revenue which represents formal economic activity at the state level. It is believed that this finding will help those engaged in financial inclusion and balancing the regions in the country.

This study aims to explore the correlation between financial deepening, the usage of digital payments, and the success of the economy in India based on secondary data. It contains an analysis of the data for the period of 2019-2020 and 2024-2025 and comparison of bank deposits, bank credit, Financial Deepening Index (FDI), and GST income for the fiscal year 2024-2025.

1.1 Research Objectives

RO1: To analyse the growth trend of digital payment systems in India by examining the performance of RuPay and Unified Payments Interface (UPI) transactions during the period 2019–20 to 2024–25.

RO2: To compare the level of financial deepening across selected Indian states using bank deposits, bank credit, CD Ratio and the Financial Deepening Index (FDI).

RO3: To examine the relationship between financial deepening and GST revenue across selected Indian states.

RO4: To suggest policy measures for strengthening financial deepening and promoting balanced economic growth through digital financial infrastructure.

1.2 Research Hypotheses

H01: There is no significant growth in digital payment transactions in India during the study period.

H11: There is a significant growth in digital payment transactions in India during the study period.

H02: There is no significant difference in the level of financial deepening among the selected Indian states.

H12: There is a significant difference in the level of financial deepening among the selected Indian states.

H03: Financial deepening has no significant relationship with GST revenue across the selected Indian states.

H13: Financial deepening has a significant positive relationship with GST revenue across the selected Indian states.

2. Literature Review

2.1 Review Method

The current research is performed as a systematic literature review (SLR) to discover research publications on financial deepening, digital payments, financial inclusion, and economic growth. The literature review utilizes the preferred reporting items for systematic reviews and meta-analyses (PRISMA 2020) to enhance transparency and avoid selection bias (Page et al., 2021).

To select the relevant research articles published between 2015 and 2025, search in databases Scopus, Web of Science, Google Scholar, ScienceDirect, SpringerLink, Emerald Insight, and Taylor & Francis Online was conducted. The search terms included many variations of the phrases Financial Deepening, Digital Payments, UPI, Financial Inclusion, Bank Credit, GST Revenue, Economic Growth, and India. Only articles published in Anglo-American journals and composed in English were analyzed. Hence, articles published in conferences, edited volumes, or repeated data were ignored.

After using inclusion and exclusion criteria, the studies found were grouped into four overarching categories in order to understand modern trends and research gaps.

Theme 1

2.2 Financial Deepening and Economic Growth

Financial deepening has been acknowledged as one of the vital factors driving economic growth over a longer term. Early theoreticians brought the idea that well-performing financial systems can make capital allocation more efficient by improving savings, fostering investments, and thus enhancing productive capacity of economies (King & Levine, 1993; Levine, 2005). Later empirical studies have also revealed a relationship between the development of the banking system and GDP growth in both developed and developing economies (Beck et al., 2007).

Current research devoted to India suggests that the growing volume of bank deposits and lending stimulated financial inclusion and made economies more resilient. However, it should be noted that the magnitude of this relationship differs from one state to another depending on the level of

industrialization, banking structure and quality of institutions (RBI, 2024). Thus, it can be stated that financial deepening creates favorable conditions for economic development, however, the outcomes of this process may differ considerably at the regional level.

Theme 2

2.3 Digital Payments and Financial Inclusion

Digital payment technologies have rapidly changed India's finance sector. Studies show how UPI and RuPay are helping to lower transaction cost, improve efficiency of payments, and broaden access to financial services (Suri & Jack, 2016).

With the COVID-19 pandemic come new consumer behavior and higher mobile phone penetration, enabling faster digital payment adoption. As the NPCI (2025) informs us, UPI is one of the top real-time payment systems in the world. Investigations show that digital payments stimulate financial inclusion of previously unbanked social groups and help achieve transparency and economic formalization (Demirgüç-Kunt et al., 2022).

However, the adoption of digital payments is unequal due to the fact that digital payments depend on digital literacy, internet connectivity, banking accessibility and income.

Theme 3

2.4 Banking Development, GST and Formalisation

The introduction of Goods and Services Tax (GST) has made India's indirect taxation system even stronger by enhancing transparency and increasing tax compliance. Many researchers have claimed that lesser number of cash-based transactions and extended formal economy is the reason for improved GST collections caused by increased digital transaction and banking penetration (Government of India, 2025).

However, there is an indication in the research literature that GST efficiency is affected by various structural factors such as industrial structure, urbanization, and business density. Therefore, development of banking alone cannot explain variations in GST collection in different states.

Theme 4

2.5 Regional Disparities in Financial Development

Regional inequality poses one of the major challenges for the Indian financial sector. Earlier studies revealed that the western and southern states are performing better in banking, credit, and digital payment adoption than eastern and northern states (RBI, 2024).

While numerous researches have explored financial inclusion, only a few of them have resolved studies on financial deepening that fallow comparison of various regions and works on composite index construction. Besides, there is limited research that integrates banking factors.

2.6 Research Gap

The systematic review identifies three significant shortcomings in the available literature.

To begin, earlier works have focused predominantly on investigating financial deepening, digital payments and GST performance in isolation rather than in combination.

Next, the majority of the empirical works concentrated on national indicators, limiting the extent of understanding variations in financial deepening.

Finally, there are few studies that introduced recent official statistics, so that regional analysis of financial deepening after the rapid development of payments in India has not been conducted.

In order to address these issues, the current research provides Financial Deepening Index (FDI) based on bank deposits and credit, discusses national trends in digital payments and conducts an analysis of financial development in selected Indian states.

TABLE 2.6 Summary Table

Author(s)	Country	Variables	Methodology	Key Findings Research	Gap
King & Levine (1993)	Cross-count ry	Financial Development , GDP	Regression	Positive relationship	No digital finance
Levine (2005)	Global	Financial Sector	Literature Review	Finance promotes growth	No state-level evidence
Beck et al. (2007)	Developing countries	Banking Development	Panel Analysis	Financial inclusion reduces inequality	No digital payment variables
Demirgüç-Ku nt et al. (2022) RBI (2024)	Global India	Financial Inclusion Deposits, Credit	Descriptive Analysis Statistical Analysis	Digital finance improves inclusion Regional disparities remain	Limited India-specific analysis No composite financial deepening index
Government of India (2025)	India	GST, Banking, Digital Payments	Official Statistics	Digital economy expanding rapidly	No integrated empirical

					framewor k

3. Research Methodology

3.1 Research Design

The present research ventures into a quantitative and comparative research design that is used to study the link between economic performance, adoption of digital payments, and financial deepening in India. The employment of quantitative methodology is necessitated due to the exclusive use of secondary numerical data in analyzing the trends in the data and comparing the financial indicators of states. The descriptive aspect of the methodology explains the patterns of growth of digital payments while the comparative aspect helps in the analysis of banking development and financial deepening.

3.2 Data Source

The data utilized in the study is secondary in nature and is collected from the Statistical Appendix to the Economic Survey 2025-26, which has been published by the Ministry of Finance of India. The statistical appendix is credible and validated in its contents regarding the digital payment systems, banking parameters, and GST revenues, thus making it a suitable choice of source for empirical analysis.

The study does not make use of any primary survey data.

3.3 Sample Selection

To analyse regional differences in financial deepening, eight Indian states were purposively selected from four geographical zones. Two representative states were chosen from each zone to ensure balanced regional representation.. The selected states represent different levels of financial development, industrialisation, and banking penetration, thereby providing a meaningful basis for comparative analysis.

Zone	**Selected States**
North	Uttar Pradesh, Punjab
South	Karnataka, Telangana
East	West Bengal, Odisha
West	Maharashtra, Gujarat

3. 4 Study Period

The study considers two different time horizons depending on the availability of official data.

● **Digital payment indicators (UPI and RuPay):** Financial Years **2019–20 to 2024–25** ● **Bank Deposits, Bank Credit and GST Revenue:** Financial Year **2024–25**

The study period has been selected to capture the rapid expansion of India's digital payment ecosystem and the latest available banking statistics.

3.5 Variables of the Study

Research Objective	**Variables**
RO1	RuPay POS Value, RuPay E-Commerce Value, UPI Transaction Value, UPI Transaction Volume
RO2	Bank Deposits, Bank Credit, Financial Deepening Index (FDI)
RO3	Financial Deepening Index (FDI), GST Revenue

3.6 Variable Measurement and Index Construction

● Credit–Deposit Ratio

● Annual Growth Rate

● Compound Annual Growth Rate (CAGR)

● Financial Deepening Index (FDI)

Table 3.6 Summary of Derived Indicators

Derived Indicator	Formula	Purpose
Credit–Deposit Ratio (%)	(Bank Credit ÷ Bank Deposits) × 100	Measures banking efficiency and credit utilisation
Annual Growth Rate (%)	((Current Year − Previous Year) ÷ Previous Year) × 100	Measures year-on-year growth in digital payment indicators
CAGR (%)	((Ending Value ÷ Beginning Value)^(1/n) − 1) × 100	Measures the average annual growth over the study period
Financial Deepening Index (FDI)	Average of normalised deposits and bank credit	Compares the level of financial deepening across selected states

3.7 Data Analysis Techniques

The study employs the following statistical techniques to address the research objectives.

Research Objective	Statistical Technique
RO1	Trend Analysis, Annual Growth Rate, CAGR, Line Graph
RO2	Financial Deepening Index, Credit–Deposit Ratio, Zone-wise Comparative Analysis
RO3	Descriptive Statistics, Pearson Correlation, Scatter Plot, Comparative Analysis
RO4	Policy Analysis and Interpretation

The gathered data were organized and examined through Microsoft Excel. The trend analysis method was utilized to study the growth trends in digital payment indices. The comparative analysis method was applied to assess the differences in the development of banking in the states, while the Financial Deepening Index was designed to measure the financial deepening capacity of the states under study. Pearson correlation analysis was carried out to investigate the correlation between financial deepening and the performance of GST.

4. Results and Discussion

In this section, empirical outcomes derived from the analysis of digital payment trends, financial deepening indices, and GST performance in various Indian states are presented. The results are discussed with respect to the research objectives with trend analysis, comparative analysis, and correlation analysis being implemented. The results are compared with findings of other empirical studies to assess their relevance and potential contribution to the existing body of research.

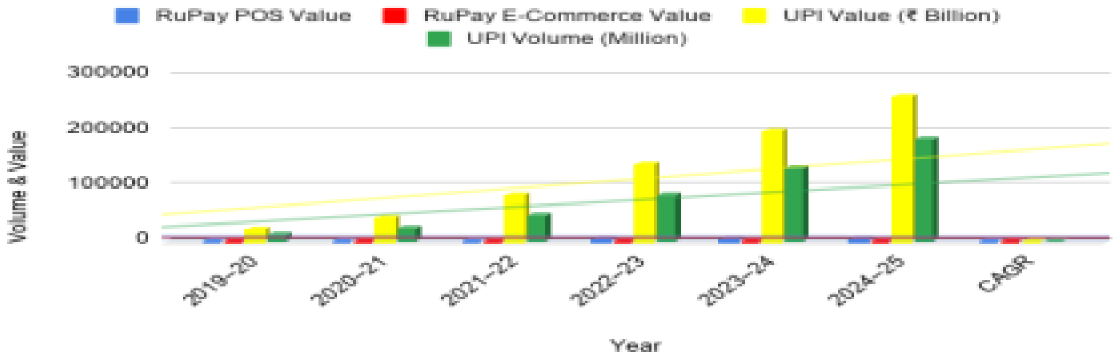
4.1 Growth Trend of Digital Payments in India (RO1)

Table 4.1 To presents the trend of digital payment indicators in India from 2019–20 to 2024–25.

Year	**RuPay POS Value**	**Growth (%)**	**RuPay E-Commer ce Value**	**Growth (%)**	**UPI Value (₹ Billion)**	**Growth (%)**	**UPI Volume (Million)**	**Growth (%)**
2019–2 0	1146.81	–	610.40	–	21,317	–	12,519	–
2020–2 1	1169.38	**1.97**	926.72	**51.83**	41,037	**92.51**	22,331	**78.38**
2021–2 2	1487.12	**27.17**	965.92	**4.23**	84,176	**105.12**	45,968	**105.85**
2022–2 3	1633.68	**9.86**	813.59	**−15.77**	139,149	**65.30**	83,714	**82.12**
2023–2 4	1550.16	**−5.11**	897.14	**10.27**	199,951	**43.70**	131,129	**56.64**
2024–2 5	1642.13	**5.93**	1337.43	**49.08**	260,570	**30.32**	185,866	**41.75**
CAGR (2019–20 to 2024–2 5)	**7.45%**	–	**17.01%**	–	**64.96%**	–	**71.02%**	–

Source: Computed by the author using data from the *Economic Survey 2025–26: Statistical Appendix*.

Figure 4.1 To presents the trend of digital payment indicators in India from 2019–20 to 2024–25.

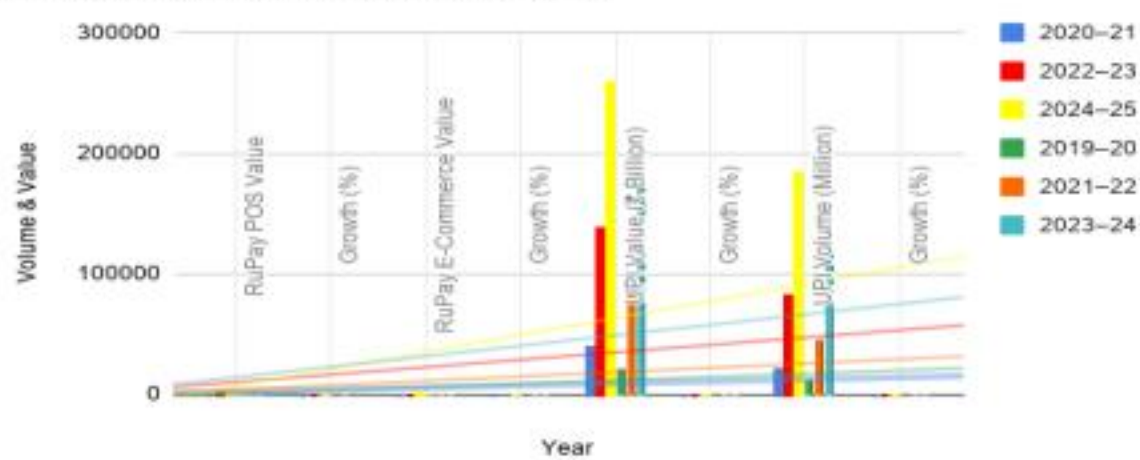


Discussion and Interpretation (RO1)

As demonstrated in Table 4.1, India's digital payment system underwent significant changes during 2019-20 to 2024-25. Overall, trends in all four digital payment indicators were upward, but the rates of growth differed from one mode of payment to another.

Among all indicators, UPI was characterized by the highest growth rate in the digital payment landscape. The value of UPI transactions soared from ₹21,317 billion in 2019-20 to ₹260,570 billion in 2024-25 with an amazing CAGR of 64.96%. Moreover, the volume of transactions rose from 12,519 million to 185,866 million, which corresponds to the CAGR of 71.02%. Such rapid development of UPI indicates that numerous people, businesses, and government selected this payment option as the one that is easy to use, reliable, and inexpensive. It should be noted that the rather high rates of growth in all years, especially in 2020-21 and 2021-22, indicate that digital payments developed throughout the years substantially faster after the COVID-19 outbreak since such payments obtained popularity in the course of the pandemic.

Figure 4.1.1 To presents the trend of digital payment indicators in India from 2019–20 to 2024–25



The RuPay card has shown positive growth trends within the timeframe examined. The worth of RuPay in POS transactions shifted from ₹1,146.81 to ₹1,642.13 billion during this timeline, thus allowing a CAGR of 7.45%. There was a slight decrease of 5.11% for 2023-24; however, this fluctuated to allow the indicator to recover in 2024-25. This signifies continued consumer confidence in the card payment systems. Likewise, RuPay E-Commerce transactions increased significantly from ₹610.40 to ₹1,337.43 billion with CAGR of 17.01%. Despite a slight decrease in 2022-23, the remarkable rise of e-commerce in the final year shows that e-commerce popularity is on the rise.

These findings align with Demirgüç-Kunt et al.'s (2022) observation that technology adoption can improve financial inclusion.

In the same vein, the Reserve Bank of India (2024) indicates that the growth of digital payment infrastructure has helped to build the banking environment in India. Moreover, the National Payments Corporation of India (2025) indicated that UPI transactions increased every year because of technological advancement and increasing adoption by consumers.

Based on the observed growth trends and CAGR values, the study concludes that digital payment systems in India have experienced significant and sustained expansion during the study period. Therefore, the null hypothesis (**H01**) is **rejected**, and the alternative hypothesis (**H11**) is **accepted**, indicating that digital payment transactions have grown significantly in India between **2019–20 and 2024–25**.

Table 4.1.1 Hypothesis Testing (RO1)

Hypothesis	Result	Decision
H01: There is no significant growth in digital payment transactions in India during the study period.	The trend analysis and CAGR indicate substantial growth in all major digital payment indicators, particularly UPI.	**Rejected**
H11: There is a significant growth in digital payment transactions in India during the study period.	Supported by consistent positive growth rates and high CAGR values.	**Accepted**

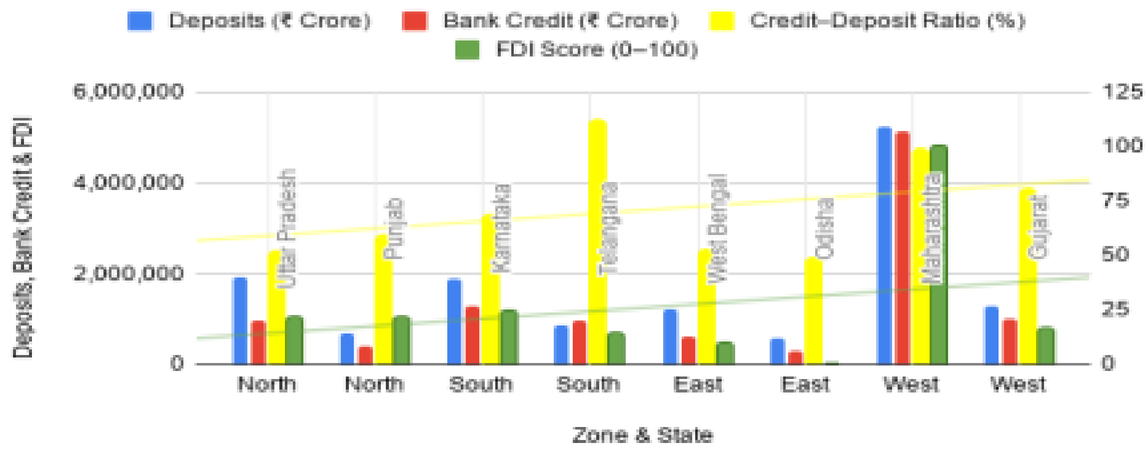
4.2 Comparative Analysis of Financial Deepening across Selected Indian States (RO2) Table 4.2 To presents a comparative assessment of financial deepening across eight selected Indian states representing the North, South, East, and West zones. The analysis is based on four key indicators, namely **Bank Deposits, Bank Credit, Credit–Deposit Ratio (CD Ratio), and the Financial Deepening Index (FDI)**.

Table 4.2 Comparative Analysis of Financial Deepening across Selected Indian States (2024–25)

Zone	State	Deposits (₹ Crore)	Bank Credit (₹ Crore)	Credit–Depos it Ratio (%)	Financial Deepening Index (FDI Score: 0–100)
North	Uttar Pradesh	1,909,885	972,486	50.92	21.3
	Punjab	668,830	391,262	58.50	3.8
South	Karnataka	1,888,708	1,279,545	67.75	24.7
	Telangana	867,571	968,183	111.60	14.5
East	West Bengal	1,225,284	632,168	51.59	9.9
	Odisha	583,925	281,088	48.14	0.0
West	Maharashtra	5,233,966	5,135,539	98.12	100.0
	Gujarat	1,273,072	1,014,466	79.69	16.5

Source: Computed by the author using data from *Economic Survey 2025–26:*

Figure 4.2 Comparative Analysis of Financial Deepening across Selected Indian States (RO2)



Discussion and Interpretation

The comparative assessment unveils noteworthy regional differences in financial development between different Indian states included in the survey. The findings reveal significant differences

in the extent of banks' deposits, loans granted by banks, the use of loans, and the Financial Development Index which means funds raised are not similar in any case across the entire country.

Among the states compared, Maharashtra happened to be the leader in terms of financial development as it has the largest volume of deposits (₹5,233,966 crore) and loans provided which has been equal to ₹5,135,539 crore. It has also recorded the highest index (Financial Deepening Index or FDI Score=100) which shows high development of the banking system allowing for effective financial mediation to occur. The Credit/Deposit ratio of banks in Maharashtra (98.12%) displays that deposits raised are used efficiently thus indicating that the banking system works effectively.

Karnataka is another Indian region characterized by advanced financial development since bank deposits equal to ₹1,888,708 crore and bank credits equal to ₹1,279,545 crore were recorded there. Karnataka has the second highest FDI indicator 24.7 which means the banking sector of the state is developing and has been successful in raising and allocating financial resources. Another state with good indicators is Gujarat which reported a healthy Credit–Deposit Ratio (**79.69%**) and moderate financial deepening, reflecting the state's strong industrial and commercial base.

A notable figure for the state of Telangana was that it had the highest Credit–Deposit Ratio at 111.60 per cent, but had only a mediocre FDI Score of 14.5. It is worth highlighting that the Credit–Deposit Ratio is above 100 per cent, which means that the lending made by banks outpaced local deposits. This points to aggressive lending and high demand for loans.

On the contrary, Odisha displayed the lowest Financial Deepening Index (FDI score of 0) and the lowest Credit–Deposit Ratio (48.14%), indicating lesser financial penetration. Similarly, West Bengal has a low FDI Score of 9.9 while having a moderate deposit structure, which shows that the existing resources are not well transformed into lending as is the case in already developed countries.

In the northern states like Uttar Pradesh and Punjab the banking sector can be termed slightly developed. Even though Uttar Pradesh is in possession of substantial deposits thanks to its population and economy, the state demonstrates a low Credit–Deposit Ratio reflecting the possibility of improvement in the lending sector. The situation in Punjab is slightly better with a Credit–Deposit Ratio of 58.50, but low FDI index points at moderate development.

Overall, the findings indicate that **western and southern states demonstrate comparatively stronger financial deepening than eastern and northern states**. These differences may be attributed to variations in industrialisation, urbanisation, banking infrastructure, investment activity, and financial inclusion across regions.

The findings are consistent with **Levine (2005)**, who argued that well-developed financial systems improve the allocation of financial resources and contribute to economic development. Likewise, **Beck et al. (2007)** emphasised that financial deepening enhances financial inclusion and supports productive investment. The **Reserve Bank of India (2024)** also reported that although India's banking sector has expanded significantly, regional disparities in banking penetration and credit distribution continue to persist across states.

Therefore, the findings confirm that financial deepening varies considerably across the selected Indian states, highlighting the need for region-specific financial policies aimed at reducing interstate disparities and promoting inclusive financial development.

Table 4.2 .1 Hypothesis Testing (RO2)

Hypothesis	**Findings**	**Decision**
H02: There is no significant difference in the level of financial deepening among the selected Indian states.	The analysis shows substantial differences in bank deposits, bank credit, Credit–Deposit Ratio, and Financial Deepening Index across the selected states. Maharashtra and Karnataka exhibit much higher financial deepening than Odisha and West Bengal.	**Rejected**
H12: There is a significant difference in the level of financial deepening among the selected Indian states.	The comparative analysis confirms considerable interstate variations in banking development and financial deepening.	**Accepted**

4.3 Financial Deepening and GST Revenue across Selected Indian States (RO3)

Table 4.3.1 To presents the relationship between Financial Deepening Index (FDI) and GST revenue across the selected Indian states.

Zone	**State**	**Deposits (₹ Crore)**	**Bank Credit (₹ Crore)**	**FDI Score (0–100)**	**GST Revenue (₹ Crore)**
North	Uttar Pradesh	1,909,885	972,486	21.3	11,202
North	Punjab	668,830	391,262	3.8	9,136
South	Karnataka	1,888,708	1,279,545	24.7	19,362
South	Telangana	867,571	968,183	14.5	13,320
East	West Bengal	1,225,284	632,168	9.9	13,797
East	Odisha	583,925	281,088	0.0	2,915
West	Maharashtra	5,233,966	5,135,539	100.0	44,865
West	Gujarat	1,273,072	1,014,466	16.5	136,748

Source: Computed by the author using data from the *Economic Survey 2025–26: Statistical Appendix*.

Figure 4.3 Financial Deepening and GST Revenue across Selected Indian States (RO3)

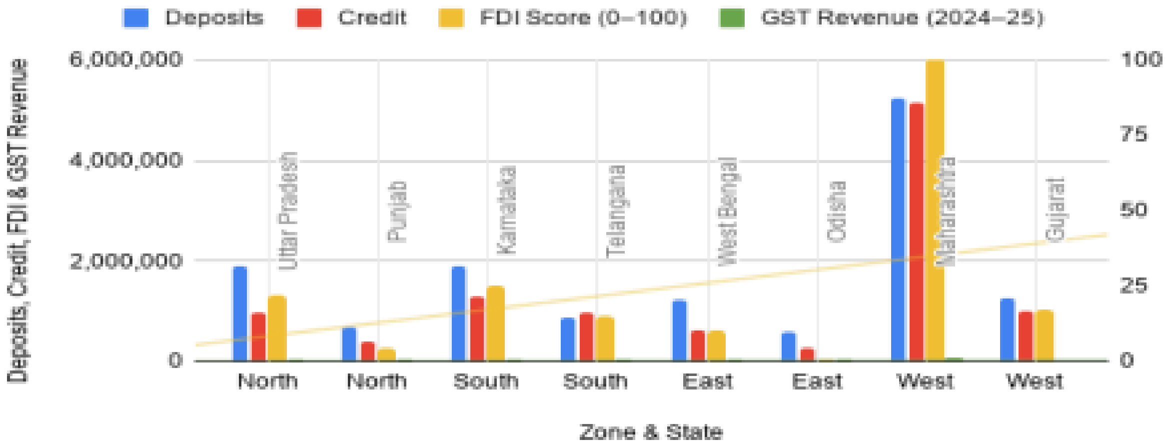


Table 4.3.2 Pearson Correlation Results (RO3)

Test	Value
Number of Observations (n)	8
Pearson Correlation Coefficient (r)	**0.185**
t-value	**0.461**
Degrees of Freedom (df)	**6**
p-value (2-tailed)	**0.661**
Level of Significance	0.05

Table 4.3.3 Correlation Matrix

Variables	FDI Score	GST Revenue
FDI Score	1.000	**0.185**
GST Revenue	**0.185**	1.000

Discussion and Interpretation

Table 4.3 explores how the Financial Deepening Index (FDI) correlates with GST Revenue in selected Indian states. Upon analysis, it can be observed how much variability exists in both the financial deepening and GST collection.

Maharashtra's financial deepening index was the highest (100) along with one of highest GST revenues (₹44,865 crore.) This essay indicates that Maharashtra has a developed banking system and organized economy as it is able to collect a considerable amount in the form of GST. The study also refers that Karnataka's financial deepening index is also relatively high (24.7) and it can generate reasonable GST revenues (₹19,362 crore) indicating that financially developed states hold large capacity for tax collection as well.

On the contrary, Odisha had the lowest financial deepening index (0) and lowest GST collections (₹2,915 crore) showing that its banking system is weak and organized economic activities are

less developed. The states such as UP, Telangana and West Bengal had moderate levels of financial deepening and moderate GST collections as well.

Upon this study, there are still some exceptions indicated. Gujarat presented the highest GST collections (₹136,748 crore) despite its moderate financial deepening index (16.5). This situation shows that GST collections are subject to many other factors like industrial production and manufacturing concentration, export activities, business density, and consumption patterns, in addition to financial deepening.

In order to test the relationship statistically, a Pearson Correlation Analysis was conducted on the Financial Deepening Index and GST revenue. The results of the analysis yielded a Pearson correlation coefficient (r = 0.185) with a p-value of 0.661. Though the coefficient indicates a weak positive correlation, it is not significant at the 5% level.

The results imply that financial deepening alone does not account for interstate differences in GST revenue. Although having an efficient banking system facilitates an economy's formalisation, GST performance also depends on the level of industrialisation, the structure of the economy in question, the level of trade activity, and the level of economic development at large. Therefore, when enhancing financial deepening, other considerations of a broader economic and industrial nature should be taken into account to increase revenue generation.

This is somewhat in contrast to the findings of King and Levine (1993) and Levine (2005), showing that financial development, overall, boosts economic growth. The difference in findings could be explained by the limited size of the sample (eight states) and the consideration of those which are economically dominant, such as Gujarat or Maharashtra, which makes these states' GST not independent of industrial or commercial factors. The same is also stated in the Economic Survey (2025–26), which emphasises that GST performance depends on both financial development and the structural characteristics of state economies.

Therefore, based on the Pearson correlation results, the study concludes that the relationship between the Financial Deepening Index and GST revenue is **positive but statistically insignificant** for the selected sample.

Table 4.3.4 Pearson Correlation Analysis

Variables	**Pearson Correlation (r)**	**p-value**	**Interpretation**
Financial Deepening Index and GST Revenue	0.185	0.661	Weak positive relationship; statistically not significant

Table 4.3.5 Hypothesis Testing (RO3)

Hypothesis	**Result**	**Decision**
H03: There is no significant relationship between the Financial Deepening Index and GST revenue across the selected Indian states.	Pearson correlation analysis shows **r = 0.185** and **p = 0.661 (> 0.05)**, indicating that the relationship is not statistically significant.	**Accepted**
H13: There is a significant positive relationship between the Financial Deepening Index and GST revenue across the selected Indian states.	The positive association is weak and statistically insignificant.	**Rejected**

4.4 Policy Implications and Discussion (RO4)

The study results have a number of important implications for policy making in relation to the improvement of financial deepening processes and inclusive economic development in India. The unexpected rise in digital transactions which was observed in RO1 indicates that India has succeeded in establishing a powerful digital payment system. The growth of digital transaction in terms of UPI and RuPay indicates that digital finance has become a key element of the financial system in India, thus, it is necessary for policy makers to invest in secure digital payment systems, cybersecurity systems and financial literacy programs in order to preserve such growth.

Comparison presented in RO2 proves that different states provide very different results in relation to financial deepening development. In particular, Maharashtra and Karnataka show a good development of banking sphere, while Odisha and West Bengal lag behind in terms of banking penetration and financial intermediation. This means that the financial development of India is very uneven. Thus, it is necessary to develop regional banking policies which will make financial services more available for less developed states.

The results of Ro3 indicate that while financial depth positively associates to GST revenue, the association is statistically weak. Hence improvement in the financial sector alone may not lead to enhancement in tax revenue. It is a fact that GST performance depends on broader economic aspects, including industry development, manufacturing processes, business concentration, formal economic transactions level, etc. Therefore, efforts to enhance GST revenues should include the implementation of financial sector reforms along with industrial development and MSME support measures, as well as measures promoting business formalisation.

The paper points out that credit growth in the productive sector is also very essential in this regard. Countries with relatively low Credit-Deposit ratios have to increase credit supply for agriculture, MSMEs, and new businesses keeping the safety of banking. Productive lending provides opportunities for investment, job creation and balanced regional development.

Moreover, better cooperation between banks, electronic payment services, and tax authorities will ensure better financial transparency and easier formalisation of economic activity. Investments in digital infrastructure, financial innovations and technologically advanced banking services will boost the Indian financial system even further.

Overall, the findings suggest that achieving balanced financial deepening requires a comprehensive policy framework that integrates digital financial inclusion, banking expansion, efficient credit allocation, and region-specific development strategies. Such an approach will help reduce interstate disparities and strengthen the resilience of India's financial system in the long run.

Table 4.4 Policy Recommendations Based on Empirical Findings

Empirical Finding	Policy Implication
Strong growth in UPI and RuPay transactions	Continue investment in digital payment infrastructure, cybersecurity, and digital financial literacy.
Significant regional disparity in financial deepening	Expand banking infrastructure and financial inclusion initiatives in financially weaker states.
Low Credit–Deposit Ratio in some states	Improve institutional credit flow to MSMEs, agriculture, and productive sectors.
Weak relationship between FDI and GST revenue	Integrate banking reforms with industrial development, digital commerce, and tax administration.
Uneven financial development across regions	Formulate region-specific financial policies to reduce interstate disparities and promote balanced growth.

5. Conclusion and Future Research Directions

The current research evaluated the influence of finance deepening and digital payments on the development of the financial system in India by analyzing the evolution of digital payment services, the inter-country differences in the advancement of finance, the relationship between financial deepening and GST collections. In this manner, using secondary data from the Economic Survey 2025-26: Statistical Appendix, the writer provides evidence of how the economy is affected by the digitalization processes and the banking development.

According to the results obtained from RO1, it is necessary to state that India's digital payment system has changed greatly from 2019–20 to 2024–25. The rapid increase in UPI transaction values and volume as well as the growth of RuPay payments means that the transition to the digital and formal finance systems. It is important to note that the significant increase in the CAGR of UPI transactions is a proof of the acceptance of digital payment systems by people, organizations, and enterprises.

The outcomes of RO2 indicate a considerable variation in the financial deepening process among the different states. Among selected states Maharashtra and Karnataka are counted as strong financial states because of the effective mobilization of deposits, credit availability, and financial development measures. The states like Odisha and West Bengal indicate a less developed financial deepening process compared to the strong states. This means that there are regional disparities in the banking industry and economic growth.

The RO3 analysis was aimed at identifying the link between Financial Deepening Index and GST revenue. The Pearson correlation analysis indicated a weak positive correlation between the two variables that was not statistically significant. This means that while the financial deepening process contributes to the economic formalization process, there are other factors affecting the generation of GST revenue.

The research is an important contribution to the existing literature as it combines digital payment development, financial deepening and tax formalization in one analytical model. Unlike previous studies that investigated either the financial inclusion process or digital payment development, our research has a state-level comparative character analyzing the financial deepening process in

India depending on the location of the states.From the policy perspective, the research shows how crucial it is to establish better digital financial systems, access to banking in poorer areas, and to achieve a better allocation of financial resources and greater financial literacy. A combination of financial development approaches based on the use of advanced financial technology and inclusive banking policies could help in achieving stable and fair economic development.

Nevertheless, the research also has some limitations — one of them is a limited size of the sample (only eight states were studied, which was caused by data availability problems), while another limitation is the cross-sectional nature of GST research, which prohibits applying findings from the current research to many countries.

In the future, the research could be extended by using additional Indian states and panel data analysis. Moreover, it would be possible to include additional variables into analysis, such as GDP per capita, industries development, creation of jobs, and digital literacy.

To summarize, one can say that the shift in the Indian economy towards innovative digital payment systems and changes in banking practice is already happening, but it should be kept in mind that effective system performance implies a prosperous financial ecosystem.

5.1 Research Contribution

The major contributions of the study are summarised as follows:

Table 5.1 Research Contribution

Contribution Area	**Contribution of the Study**
Digital Finance	Provides evidence of India's rapid digital payment transformation through UPI and RuPay growth analysis.
Financial Development	Highlights interstate disparities in financial deepening using state-level banking indicators.
Economic Formalisation	Examines the association between financial development and GST revenue performance.
Policy Perspective	Provides evidence-based recommendations for inclusive and balanced financial development.

Source: Prepared by the author.

Table 5.2 Limitations of the Study

The major **limitations of the Study** are summarised as follows:

S. No.	**Limitation**	**Implication**
1	The study is based entirely on secondary data obtained from the *Economic Survey 2025–26: Statistical Appendix*.	The findings depend on the accuracy and completeness of the published government data.
2	Only eight representative states from the North, South, East, and West zones were selected.	The findings cannot be generalised to all Indian states and Union Territories.
3	The analysis of Financial Deepening Index (FDI) and GST Revenue is based on cross-sectional data for the financial year 2024–25.	The study does not capture changes in the relationship over a longer time period.
4	The Financial Deepening Index was constructed using selected banking indicators (bank deposits and bank credit).	Other dimensions of financial development, such as insurance, capital markets, and financial inclusion, were not incorporated.
5	The study focuses on selected variables, including RuPay, UPI, bank deposits, bank credit, and GST revenue.	Other macroeconomic factors such as per capita income, industrialisation, inflation, digital literacy, and institutional quality were beyond the scope of the study.

Source: Prepared by the author.

Table 5.3 Future Research Directions

The major **future Research Directions** are summarised as follows:

S. No.	Future Research Area	Recommendation
1	Wider geographical coverage	Include all Indian states and Union Territories for better generalization.
2	Longitudinal analysis	Use panel data covering multiple years to examine long-term trends in financial deepening.
3	Additional variables	Incorporate variables such as financial inclusion, digital literacy, industrial output, per capita income, and employment.
4	Advanced analytical techniques	Apply panel regression, fixed/random effects models, Structural Equation Modelling (SEM), or Data Envelopment Analysis (DEA).
5	Comparative studies	Compare India's financial deepening with other emerging economies to identify best practices and policy lessons.

Source: Suggested by the author.

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