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Digital Financial Inclusion and Financial Literacy: An Analysis of Himalayan States in India

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Abstract

This study examines digital financial inclusion and financial literacy in the Himalayan states of India, utilizing data up to November 2023 from sources like NCFE 2019, FinEQUITY BRIEF 2021, and the Digidhan dashboard. The focus is on the analysis of digital financial inclusion and digital financial literacy, assessing how these contribute to the adoption of digital payment platforms such as BHIM, *99#, RUPAY, IMPS, and AEPS. The findings reveal diverse adoption levels of digital financial services across the region. States like Uttarakhand and West Bengal show advanced usage of digital payment systems, while Arunachal Pradesh and others display early stages of digital financial involvement. The analysis shows variability in digital financial literacy and inclusion compared to the national average, highlighting the impact of education and awareness in promoting digital financial integration.

Keywords: Financial Inclusion; Digital Financial Inclusion; Himalayan States

1. Introduction

Integrating the digital drive across the nation significantly impacts economic activity as new and innovative financial services, suppliers, and products enter the market. Global digitization has evolved significantly in recent years and the digital era has significantly influenced the financial industry. The increasing prevalence of these fintech solutions is gradually changing corporate finance policies and the consumer patterns of people (Ding et al., 2022). Today's consumers utilize a computer and smartphone to do transactions, whether they are purchasing something or just using services. In addition to influencing everyday customers, big businesses utilize business analytics and modern technology in their banking and finance operations, trading, and commercial activities to gain a competitive advantage and boost revenues (Tiwari, et.al.,2020). Different types of digital financial services (DFS) benefit both customers and operators. Such transactions are faster, safer, more accurate, and completed on time. In addition, they save money and make customers happy by enhancing the efficiency of company operations. Accordingly, this truly describes what digitization has done to our economy. Digitalization, the transformation of information into digital form simplifies the work processes involved. Through this digital revolution, the world is advancing toward an unprecedented level. Everything is cashless, from withdrawing the money in our hands to repayment of loans, India is not forgetting concretely how to create an environment suitable for digital banking. India is currently ranked 50th in the Inclusive Internet Index released by Economist Impact (2022). The Digital India program that Prime Minister Modi rolled out in 2015 is designed largely to provide all citizens with the digital skills needed for doing transactions digitally. At the same time, some technologies are not available in a usable or accessible form to consumers with limited technology provision services. Because of a lack of digital financial literacy, even when they do understand, it is still hard for consumers to obtain their greatest benefit from such programs and functions. Enabling consumers to fully utilize digital financial services (DFS), digital financial literacy (DFL), sometimes referred to as digital financial capacity, lies at the nexus of digital and financial literacy and is a necessity. An essential area of research for India's Himalayan states that are Himachal Pradesh, Uttarakhand, Arunachal Pradesh, Sikkim, Assam, West Bengal, and Jammu and Kashmir is the evaluation of financial literacy and financial inclusion, particularly digital financial literacy. Through this analysis, we discuss the existing status of digital financial awareness and availability in these locations. Thus, understanding these intricacies is essential to developing successful policies that address knowledge and skill gaps and support broader programs intended to promote the economies and general well-being of Himalayan societies.

2. Conceptual Framework and Previous Research

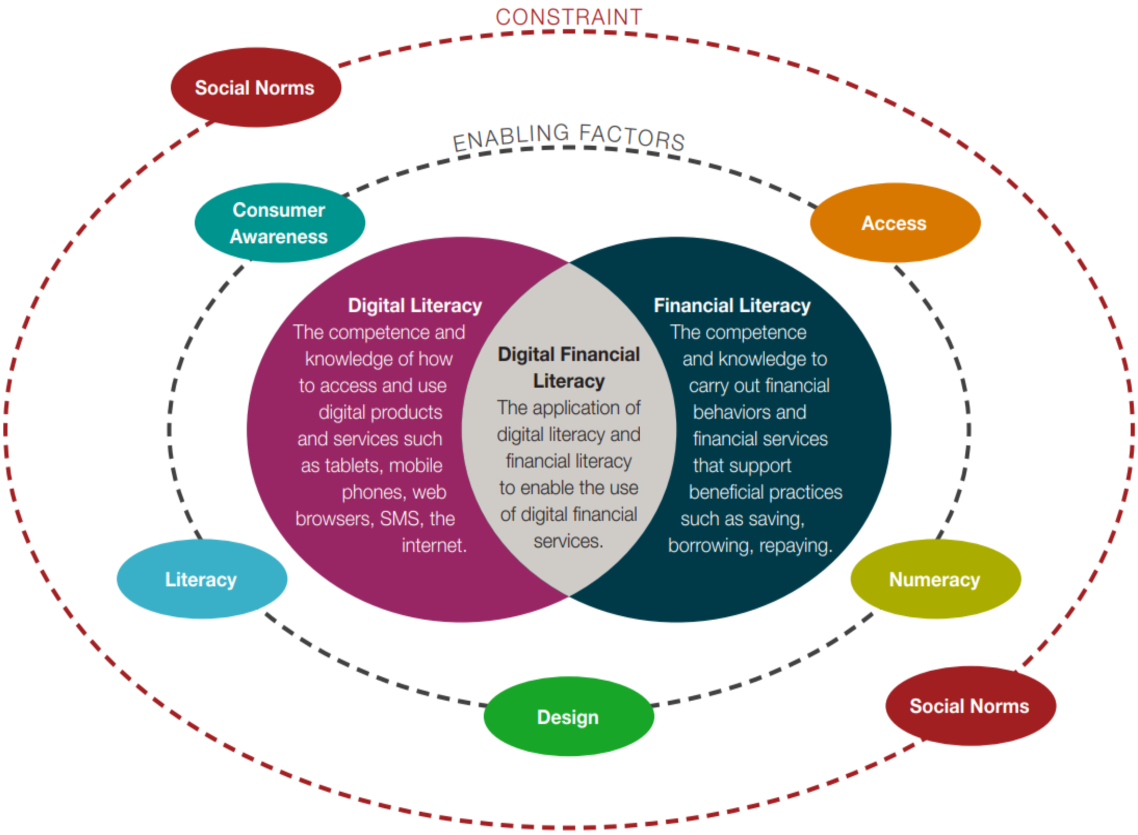
2.1 Financial Inclusion and Digital Financial Inclusion

Financial inclusion is gathering great interest among policymakers and academics. It is believed to be an essential strategy for attaining the UN's Sustainable Development Goals (Sahay et al, 2015; Demirguc-Kunt et al, 2017). It also improves societal integration. It helps to alleviate poverty. To reduce financial exclusion, governments in several different countries are devoting significant resources to enhancing financial inclusion. In 2005, Dr. K. C. Chakraborthy, the chairman of the Indian Bank at the time, launched a pilot project in Pondicherry that marked the beginning of Financial Inclusion in India. It was noted that Mangalam Village was the first in India to provide financial services to every family (Paramasivan and Ganeshkumar, 2013). Financial inclusion is defined as having easy access to a range of basic formal financial provisions and service products, such as savings, remittances, loans, government insurance constructs, and pensions, at a minimal cost with the necessary safeguards, for farmers and low-income households who cannot afford to use formal outlets. Additional social capital transfers, more traditional banking options available to small firms, and an emphasis on using technology to reduce costs and boost service efficiency all serve to complement all of this (Mohanty 2015). The digital services and products offered by banks are still mostly unknown. The public is aware of no-minimum balance accounts, ATM cards, and mobile banking, but they are less familiar with electronic services like internet banking and mobile baking. As a result, education continues to have a significant impact on how integrated these groups are (Reserve Bank of India, 2013). According to the 2014 Financial Inclusion Insights Survey in report “Financial Services Use and Emerging Digital Pathways India” by Inter Media and the Bill and Melinda Gates Foundation, even though benefits are often utilized for cash transactions, respondents expressed optimism over the electronic transfer of benefits.

The use of information and communication technologies (ICTs) has increased significantly during the last ten years. Every element of our everyday life is being transformed by their integration. Financial services have changed dramatically as a result of the widespread use of smartphones and the Internet, which has affected everything from consumer behaviors to products. Digitally enabled digital financial inclusion (DFI) Smartphones and the Internet have made it possible for a large number of these prospective clients to use basic banking services, meeting financial needs. Digital financial services provide a chance to destroy long-standing barriers based on expense, location, and invisibility, thus opening the door of inclusion for society's weaker members (Kulkarni and Ghosh, 2021). Financial inclusion (FI) has been proven to be significantly enhanced by the digitization of financial services. With the advent of digital financial services, customers may access credit, savings, and payments all at once online—they no longer need to visit a bank. On the other hand, a wealth of empirical research indicates that technology may benefit the most vulnerable sections of society by providing them with access to financial institutions (Ozili, 2018). Digital financial inclusion (DFI), which is the same as traditional financial inclusion (FI) except that only electronic money has any value, is the product of information and communication technology (Aziz and Naima, 2021).

2.2 Financial Literacy and Digital Financial Literacy

The definition of financial literacy requires to be the primary emphasis to understand the term "digital financial literacy." Financial literacy refers to the understanding of an individual about his or her financial affairs, which enables him or her to handle personal finances in everyday life. As Hastings, Madrian and Skimmyhorn (2013) describe it, wealth management is the ability to make sound judgments over one's lifetime as a result of owning appropriate information, skills, and even consciousness. It deals with a wide spectrum of the person's financial lifespan and is made up of personal finance habits, attitudes, and understanding. According to Morgan, Huang, and Trinh (2019), "digital financial literacy" refers to the understanding of digital financial products and services. Digital financial services (DFS) encompass a broad line of products and services (including insurance, savings accounts, and payment processing, etc.) offered through various channels such as mobile applications, ATMs, etc. are constantly evolving. Mobile payments, mobile money, and mobile banking all belong to the realm of financial products for new devices. M-Money uses mobile networks to make electronic transactions. **Figure 1** shows a conceptual model of the circumstances that impact digital financial literacy and inclusion. At the core of the framework is the concept of Digital Financial Literacy, which merges the knowledge and skills from two domains: Digital Literacy and Financial Literacy. Digital Literacy can be understood as people's knowledge about accessing and applying digital products, including smartphones, tablets, mobile browsers operating systems (MS), SMS messaging services, and the Internet.



Source: FinEQUITY BRIEF, 2021 **Figure1.** Digital Financial Literacy

Financial Literacy is the ability to understand and engage in financial responsibilities and actions that facilitate individual monetary activities such as saving, borrowing money, and repayment. This is all-important for sound financial planning. Around these literacies are enabling factors that support the practical use of digital financial services. Critical here are consumer awareness and design because they determine whether consumers understand, and trust digital financial services, hence this requires quality end-users. Limiting factors such as access, numeracy, and social norms can hamper digital financial inclusion. This term describes the ease with which people can access relevant infrastructure; numeracy, or a person's ability to use numbers in business transactions, and thus an important related factor; social norms that influence how new financial technologies are received. These factors combine to form an operating environment in which the interaction between skill capability and institutional structure, along with people's attitudes towards digital financial services and their design itself, become critical elements that affect financial accessibility for every individual in society. This ecosystem is one that policymakers, financial service providers, and educators must come to understand in the pursuit of improving digital finance literacy and access.

3. Objectives

1. To examine digital financial inclusion (DFI) among Himalayan states.
2. To examine digital financial literacy (DFL) among Himalayan states.

4. Hypothesis

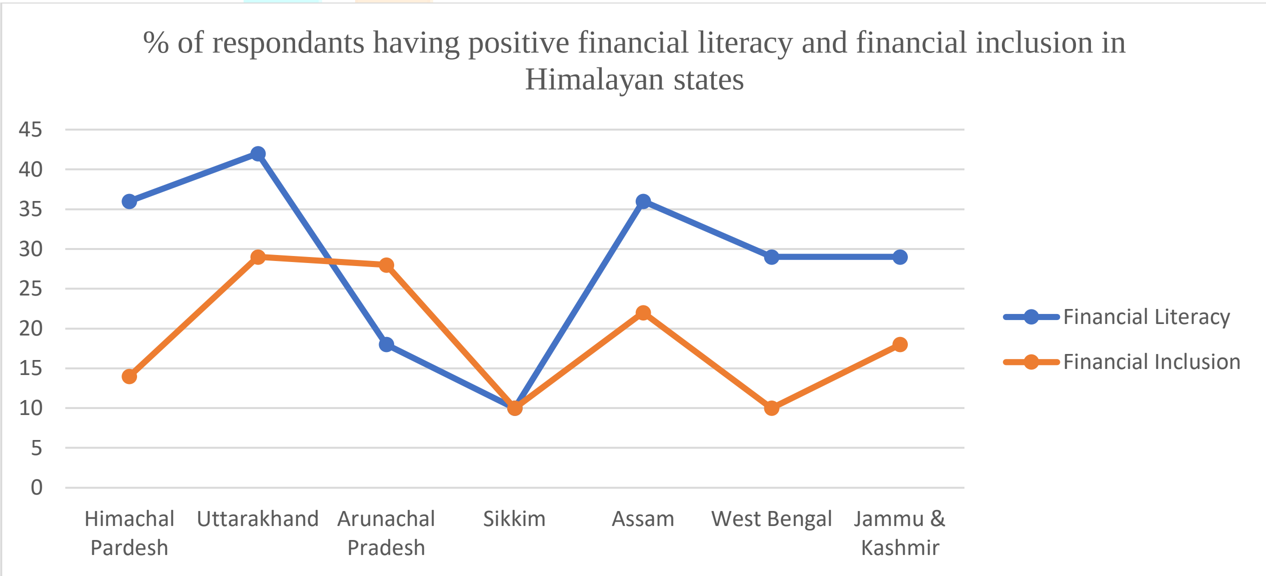
1. Digital financial inclusion is less in Himalayan states.
2. Digital financial literacy is lower in Himalayan states.

5. Methodology

This study is based on secondary data that is collected from several research papers, reports from national and international institutions such as RBI, IMF and websites, etc. The 2019 report by India's National Centre for Financial Education (NCFE) provided authoritative insights into trends in financial literacy in India. Another important research document that we utilized is "Digital Payment se Pragati ko Gati Overview of India's Digital Payments Journey" published in 2023. This compendium offers an in-depth look at the direction and contribution of digital payment systems in India. This approach allowed for an overall assessment of digital financial inclusion and digital financial literacy in Himalayan states of India.

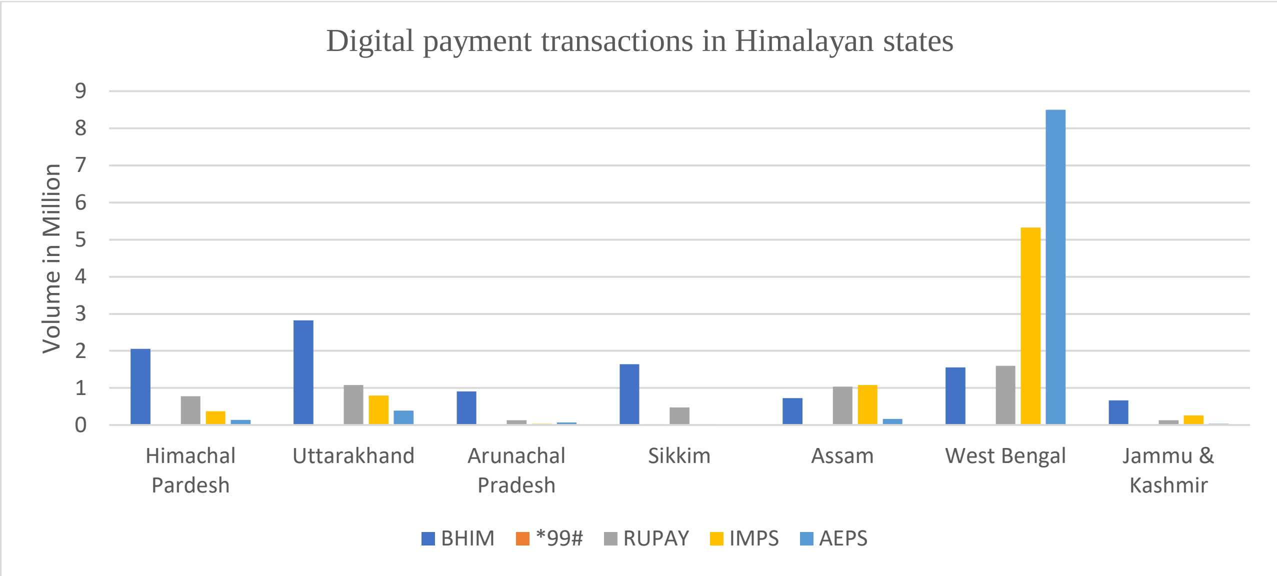
6. Results and Discussion

The results reveal diverse adoption levels of digital financial services across the region. States like Uttarakhand and West Bengal show advanced usage of digital payment systems, while Arunachal Pradesh and others display early stages of digital financial involvement.



Source: Author's compilation from NCFE, 2019 **Figure 2**

Figure 2 shows the differences in positive financial literacy levels and financial inclusion among the various Himalayan states and the national average. Uttarakhand stands in first place with 42 percent of financial literacy, demonstrating that the majority of that population understands financial matters. Next follows Himachal Pradesh with a 36 percent rate, which is on par with Assam. The rates for Jammu & Kashmir and West Bengal are both 29 percent. The states with the lowest financial literacy rates are Arunachal Pradesh and Sikkim at 18 percent and 10 percent. India's national average is 27 percent, so these Himalayan states must be all over the map in terms of financial literacy. Looking at financial inclusion, which measures access to and use of financial services, Uttarakhand remains tops with 29 percent, Arunachal Pradesh coming in second with 28 percent. The states of Himachal Pradesh and Assam are only moderately inclusive, at 14 percent and 22 percent, respectively, while Jammu & Kashmir scored 18 percent. At the bottom are Sikkim and West Bengal, with 10 percent. While some Himalayan states are ahead of the curve, the all-India average for financial inclusion is 15 percent; there is still much work to be done. These findings further reveal the uneven rate of success in promoting financial literacy and promoting financial inclusion throughout the Himalayan states, factors that can directly impact the economic well-being and development of these states.

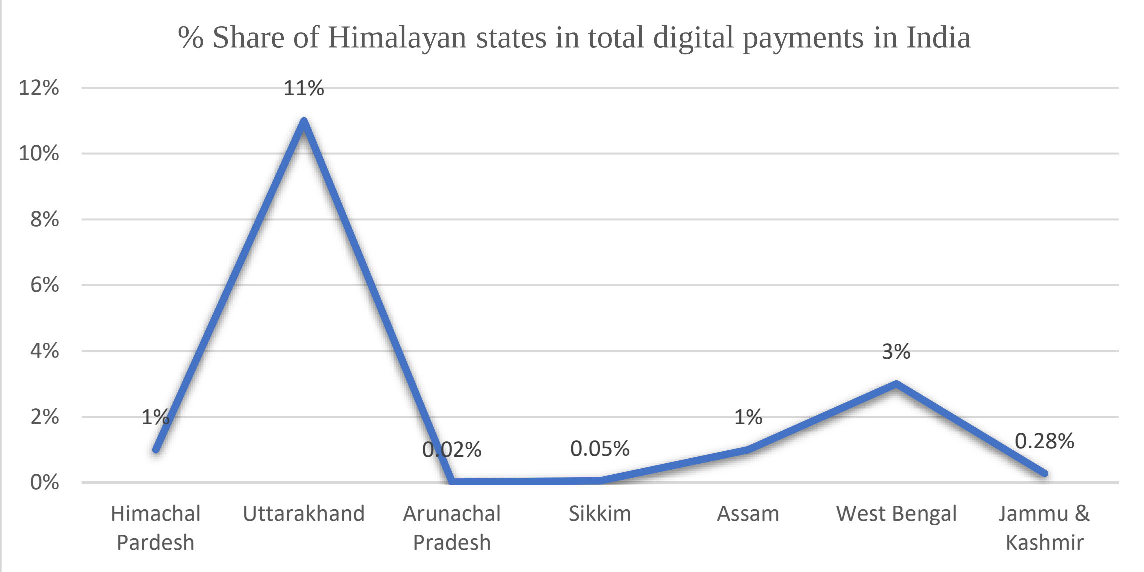


Source: Author's compilation from **Figure 3**

https://digipay.gov.in/dashboard/default.aspx#

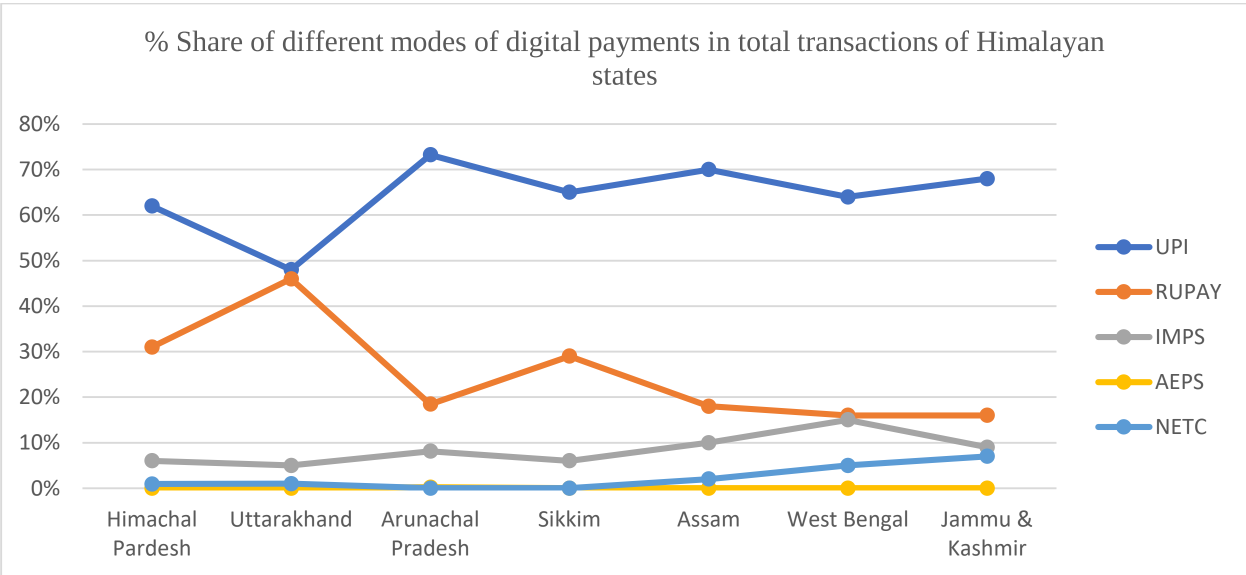
The dataset represented by **Figure 3** reveals the number of digital payment transactions, in millions, in different states across India's Himalayan region according to the Digipay dashboard as of 30 November 2023. Participating digital payment platforms are BHIM, *99#, RUPAY, IMPS, and AEPS. The robust growth of digital payment methods is confirmed by the fact that Uttarakhand ranks first with 2.821 million transactions on BHIM and second, with 0.387 million on AEPS. Comparatively speaking, Arunachal Pradesh comes out last with the fewest transactions maximum of 0.906 million on BHIM, resulting in adoption that is lagging even further behind other states.

In contrast, West Bengal is dominated by IMPS and AEPS at 5.322 million and 8.504 million respectively, representing a massive increase in transactions for both these forms of payment. This seems to reflect a degree of familiarity and dependence within the state on these specific digital payment systems. Himachal Pradesh with 0.369 million, Sikkim with 0.029 million, and Assam have moderate usage on all platforms and an especially with IMPS 1.083 million transactions. It also revealed that app-based or card-based digital payment systems enjoy greater popularity among users than the Nexus Pay USSD *99# service, to which only a small number of people have subscribed in every single state. Comparatively low levels of transactions still reveal the relatively uniform distribution across these different platforms, with Jammu & Kashmir one notable exception. The digital payment penetration varies widely across Himalayan states as a function of the level of development of digital financial infrastructure and consumer preference for using such means.



Source: Author's compilation from Digital Payment se Pragati ko Gati, 2023 **Figure 4**

Figure 4 shows the relative proportion of digital payment transactions in various Himalayan states to indicate how many people use these services. Uttarakhand commands a significant majority among Himalayan states with 11 percent of India's total digital payment transactions, indicating a relatively higher penetration and adoption of digital payment infrastructure or a more digitally literate population within the state. However, with Himachal Pradesh and Assam each accounting for only 1 percent, participation in digital payments appears to be slight compared with the national average. That's West Bengal, which has a 3 percent, which is pretty high by state standards. There still ought to be more development in terms of digital transactions there. Thus, the shares for Jammu and Kashmir, Arunachal Pradesh, and Sikkim are much smaller that are 0.28 percent, 0.02 percent, and 0.05 percent respectively, showing that they are still at an early stage of digital payment adoption. These figures reflect the varied levels of digital financial integration throughout the region, showing some states with a strong online economy and others that are primed to see rapid growth in this area. These figures are crucial for examining regional differences in digitization levels and will serve as a reference guide to carefully selected policy measures, aiming to provide further assistance with financial digitalization.



Source: Author's compilation from Digital Payment se Pragati ko Gati, 2023 **Figure 5**

Figure 5 shows the proportion of different modes to total digital payments in each Himalayan state, revealing which channels are preferred for transactions. UPI is the most popular mode of payment in all Himalayan states with 73.23 percent dependence in Arunachal Pradesh, showing that people have a preference for mobile wallets there. Next comes Assam with 70 percent and Sikkim with 65 percent, which also shows that there is a strong demand for UPI transactions. RUPAY cards are predominantly used in Uttarakhand, accounting for 46 percent of digital payments, which is the highest among the Himalayan states, suggesting a preference for card-based transactions. The region stands out for its reliance on bank transfer services, with West Bengal leading the way in Immediate Payment Service (IMPS) penetration at 15 percent. Aadhaar Enabled Payment System (AEPS) has minimal usage across most states, with Arunachal Pradesh being the highest at a mere 0.20 percent, implying limited engagement with this payment service. National Electronic Toll Collection (NETC) transactions are most prominent in Jammu & Kashmir at 7 percent, revealing a notable adoption of this specific digital payment mode for toll payments within the state. Each Himalayan state has adopted a variety of digital payment systems.

Table 1 Volume of transactions in Himalayan states through different modes of payments (in crore)

	UPI			**RUPAY**			**IMPS**			**AEPS**		
State	2019-20	2020-21	2021-22	2019-20	2020-21	2021-22	2019-20	2020-21	2021-22	2019-20	2020-21	2021-22
Himachal Pradesh	5.0	11	25	6.0	6.0	9.0	1.0	1.1	2.0	0.0006	0.0011	0.0012
Uttarakhand	9.0	19	39	21	19	24	1.0	2.0	4.0	0.015	0.022	0.017
Arunachal Pradesh	0.6	1.44	3.42	0.13	0.17	0.33	0.072	0.11	0.29	0.00071	0.00059	0.00047
Sikkim	0.4	0.936	2.06	0.37	0.48	0.69	0.069	0.093	0.175	0.00005	0.00003	0.00043
Assam	7.7	16.55	34.97	4.52	4.63	6.03	1.73	2.67	3.77	0.00004	0.00033	0.00242
West Bengal	34	64	117	21	19	24	14	16	22	0.03	0.04	0.07
Jammu & Kashmir	1.9	4.62	14	0.786	1.203	2.725	0.521	0.79	1.536	0.00025	0.00042	0.00035

Source: Author's compilation from Digital Payment se Pragati ko Gati, 2023

The statistics reflect an expanding development of a digital payment ecosystem in the Himalayan states that varies according to the development of digital infrastructure, consumer habits, and digital financial literacy. This also highlights the importance of targeted policy measures to promote and aid financial digital transformation. With each state displaying different preferences for digital payment systems, it is clear that targeted implementation techniques are essential for nurturing the digital financial integration pillar of socio-economic development in these states.

7. Conclusion

The study shows that there is a diverse digital payment environment in India's Himalayan states. Despite its enormous growth over a short period, there remains wide diversity in digital payment penetration, such as the rapid rise in UPI transactions on one side and relatively stable RUPAY card use on the other. This difference too seems to reflect differences between areas in terms of digital infrastructure and financial awareness levels. Regional bias based on the payment method can be seen with in the states such as Uttarakhand and West Bengal especially heavily favoring cards or bank transfer services. The digital gap needs to be overcome through strengthening the infrastructure and promoting digital financial literacy, especially in underdeveloped areas. Supportive educational programs that improve digital and financial literacy along with the provision of easy-to-use, convenient services will foster inclusive participation in finance. The crucial point is that hypothetical policies must correspond to the conditions of each nation or state, and should be designed in light of its existing situation, for example, accessibility, literacy, geographical conditions, and precautions at every level. Learning from the East as India modernizes, promoting digital financial inclusion is at once an economic necessity and also part of a larger effort to promote holistic socioeconomic development. The results of this study should become the basis for planning, and informing efforts to develop a more integrated and inclusive digital environment that will foster progress in financial inclusion within Himalayan states.

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