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Research Article

Financial Inclusion in Arunachal Pradesh (India): Examining Credit Access

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Abstract: Financial inclusion has been recognized as a critical driver of equitable economic growth and poverty reduction, particularly in developing economies. The study explores the extent of financial inclusion in Arunachal Pradesh, focussing on the accessibility and distribution of credit among rural and urban households. Using secondary data from the All India Debt and Investment Survey (AIDIS) report conducted in 2019, this research explores deposit accounts, AOD, IOI and cash outstanding at various rate of interest to evaluate variations in access to credit across rural and urban sectors, social categories, and different lending institutions. The findings suggest that account holder, AOD, and household indebtedness are more in urban areas of Arunachal Pradesh. However, reliance on non-institutional credit, particularly in urban areas, is highest in Arunachal Pradesh among the North Eastern Region (NER). This shows that the current efforts of financial institutions are inadequate to satisfy the urban credit requirements to achieve financial inclusion. Moreover, the lesser share of deposit account and indebted households in rural areas of Arunachal Pradesh reflects a poor outreach and accessibility of official financial institutions among rural households. The study highlights the need for targeted policy measures to promote equitable access to credit in Arunachal Pradesh.

Keywords: Financial Inclusion; Credit Accessibility; Institutional and Non-Institutional Sources; AOD; IOI; Arunachal Pradesh; North Eastern Region (NER)

1. Introduction

Financial inclusion can be broadly defined as the provision of accessible, affordable, and appropriate financial services to all individuals and businesses, with particular emphasis on marginalized and low-income segments [1,2,3,4]. It is “the extent of access by all sections of society to formal financial services such as credit, deposit, insurance and pension services.”, [5]. At its core, financial inclusion encompasses universal access to a comprehensive suite of formal financial products and services, including savings, credit, insurance, and pension schemes, delivered in a responsible and sustainable manner.

Empirical research highlights financial inclusion’s transformative potential in improving living standards and fostering economic empowerment among disadvantaged populations [1,3]. Nationally, the expansion of inclusive financial policies is closely aligned with the achievement of the United Nations Sustainable Development Goals (SDGs), with financial access recognized as a key enabler for several targets. Notable progress has been made towards financial inclusion. Flagship programs such as the Pradhan Mantri Jan Dhan Yojana (PMJDY), Pradhan Mantri Suraksha Bima Yojana (PMSBY), and Atal Pension Yojana (APY) have significantly expanded the reach of banking, insurance, and pension products, especially among vulnerable groups. By 2025, more than 550 million individuals were enrolled under PMJDY, representing a substantial increase in formal financial participation. Moreover, the

Reserve Bank of India's Financial Inclusion Index increased from 53.9 in March 2021 to 67.0 in March 2025, reflecting enhanced access, utilization, and quality of financial services across banking, insurance, investments, and postal sectors [6]. The World Bank, in collaboration with the G20, has worked proactively to advance global financial inclusion through advocacy and implementation of the G20 High-Level Principles for Digital Financial Inclusion. Furthermore, the G20's endorsement of High-Level Principles on SME Financing supports expanded access to a wide array of financing channels for small, medium, and micro-enterprises. Collectively, these initiatives seek to ensure that individuals and businesses worldwide can access reliable, affordable financial services, thereby fostering inclusive economic development and growth.

According to the CRISIL Inclusix report for 2016, India achieved a financial inclusion score of 58 percent in 2016, reflecting the reach and accessibility of formal financial services nationwide. The total number of bank branches established in the country reached 1.35 lakh, while deposit and credit accounts with banks and microfinance institutions stood at 164.6 crore and 19.6 crore, respectively.

In India, there has been an increase in the credit requirement among farmers and this increase in credit needs of the farmer has been mainly due to an increase in the commercialisation of agriculture [7]. However, among the impoverished population, formal institutions of any nature are a rare occurrence [8]. Large firms with new investment prospects have the ability to secure external financing, whereas small firms often face difficulties in accessing such funding [9]. Factors such as limited disposable income, lack of documentation, insufficient financial literacy, geographic isolation, high transaction costs, and inadequate service quality continue to impede universal financial access [10,1].

Despite significant initiatives and advancements at national level, substantial financial exclusion still persists in the northeastern region. Financial exclusion can be defined as the condition where individuals, households, or groups, despite having a demand for credit, are denied access to appropriate financial services [1]. In the northeastern region, there was a marginal increase in branch penetration, with the figure rising from 41.2 in 2013 to 42.5 in 2016. Notably, credit penetration in the region experienced significant growth, rising from 35.8 percent in 2013 to 47.7 percent in 2016. Similarly, deposit penetration increased from 45.9 percent to 63.7 percent over the same period. Despite these improvements, the northeast continued to register the lowest Inclusix score of all five regions in India, underscoring ongoing challenges to financial inclusion in the area. Moreover, financial inclusion varies more widely in the northeast region than in other regions, which highlights the existence of isolated areas with challenging landscapes that make expanding financial access particularly difficult [5]. In eastern India, the financial stability of agricultural households is positively impacted by credit availability. Caste, education, and landholding size are some of the key elements that influence a household's ability to obtain credit. Households having larger sizes of landholding have higher tendency to take credit from both formal and informal sources. Additionally, farmers who obtained loans from official sources have a higher level of economic well-being than those who obtain credit from unofficial sources [11].

Most of Arunachal Pradesh's population resides in villages, and the state consistently ranks among the lowest in terms of financial inclusion and core infrastructure development. The widespread rural settlement means that access to reliable banking and essential public infrastructure remains significantly limited and underdeveloped [12]. In 2016, Kurung Kumey district in Arunachal Pradesh recorded the lowest level of financial inclusion among all 666

Indian districts, with a CRISIL Inclusix score of just 5.2 percent [5]. In contrast, Papumpare district registered the highest score within the state, ranking 111th at the all-India level according to the CRISIL Inclusix score for the same year.

2. Theoretical Framework

Financial inclusion is conceptualized as both a process and an outcome. As a process, it denotes the efforts to provide equitable access to formal financial institutions and services; as an outcome, it reflects the degree of integration of individuals and enterprises into the financial system. Finanial inclusion encompasses accessible, affordable, and responsible financial products such as savings, credit, insurance, and pension schemes that promote economic stability and social well-being [10,13].

The analysis is grounded in financial intermediation theory, which explains the emergence of financial intermediaries as institutions that stand between ultimate savers and borrowers, transforming savings into credit while reducing transaction costs and managing risk [14]. Modern formulations emphasize imperfect and asymmetric information (moral hazard, adverse selection and signalling) as central features of credit markets, with financial institutions acting to mitigate these frictions by screening, monitoring and pricing risk. Informational asymmetries thus provide a core rationale for the existence of intermediaries and help explain why certain borrowers, especially those lacking collateral, documentation or formal credit histories, remain rationed out of institutional finance and are pushed towards informal or non-institutional sources [15,16].

Within this theoretical lens, access to credit constitutes a core pillar of financial inclusion [1,3]. Empirical and theoretical work shows that adequate credit access enables smallholders, micro-entrepreneurs and low-income households to undertake productive investment, smooth consumption, and build resilience to shocks to livelihoods [17,18], whereas credit constraints and contractions in bank lending can depress firm activity, household welfare and overall growth, [19]. In developing and structurally constrained regions, such as the North northeastern of India, distortions in credit and factor markets amplify these effects, reinforcing spatial, social and occupational disparities in financial inclusion. Persistent reliance on non-institutional credit at often higher or opaque interest rates signals incomplete formal intermediation and segmented credit markets, in which informal lenders fill gaps left by the formal system.

In this study, the theoretical framework links these intermediation and inclusion mechanisms to the observed indebtedness in Arunachal Pradesh. AOD and IOI, disaggregated by rural–urban location, social group, occupation and source of credit, are interpreted as outcomes of how effectively financial intermediaries extend affordable, appropriate credit to different segments of the population. Where formal intermediation is weak, due to geographic remoteness, limited financial infrastructure, low financial literacy, or perceived borrower risk, households are more likely to exhibit lower account ownership, higher dependence on non-institutional sources, and potentially more vulnerable debt profiles. This framework therefore guides the empirical comparison between Arunachal Pradesh and other northeastern states, and underpins the policy recommendations aimed at strengthening institutional credit channels and reducing reliance on non-institutional finance as a pathway to deeper financial inclusion in the state.

3. Review of Literature

3.1. Financial Inclusion

Financial inclusion refers to the provision of accessible and affordable financial products and services that cater to the requirements of individuals and businesses, delivered in a responsible and sustainable manner. It encompasses both access to and effective use of financial services that support transactions, payments, savings, credit, and insurance for all segments of society [20,13]. The Organisation for Economic Co-operation and Development (OECD) has defined financial inclusion as:

"Financial inclusion refers to the process of promoting affordable, timely and adequate access to a wide range of regulated financial products and services and broadening their use by all segments of society through the implementation of tailored existing and innovative approaches including financial awareness and education with a view to promote financial well-being as well as economic and social inclusion."

It means to ensure that all individuals and businesses can access and utilize affordable, reliable financial services tailored to their needs, including payment systems, savings options, credit, and insurance.

3.2. Rationale for Financial Inclusion

Financial inclusion serves as a key enabler for the achievement of seven out of the 17 Sustainable Development Goals, supporting critical objectives such as poverty reduction, gender equality, improved health, quality education, reduced inequalities, stronger economic growth, and enhanced industry, innovation, and infrastructure. Financial inclusion supports entrepreneurship and business growth, empowers women and helps build resilience for people and businesses vulnerable to climate change and natural disasters [13]. Greater access to financial services for households and businesses is linked to increased economic growth and enhanced job creation [20]. In the cities of India, poverty rates have notably declined when citizens were afforded enhanced access to financial and banking services [21].

Financial inclusion is now widely acknowledged as an important catalyst for economic development and poverty reduction [13]. Having access to formal financial services enhances job creation, increases investments in education and health, and makes individuals and businesses less susceptible to financial shocks [10]. It is a crucial factor for the growth and sustainability of small and newly established firms, enabling them to expand operations, invest in new technologies, and improve productivity [22]. If people and enterprises lack access to these services, they must depend on their own limited resources or resort to expensive informal financial sources, which often restrict their ability to fully realize growth opportunities [10]. A significant proportion of the world's poor could benefit from access to financial services, yet they remain excluded as a result of market inefficiencies or insufficient public policy interventions [22].

3.3. Constraints of Financial Inclusion

Financial exclusion refers to individuals not accessing or using any financial products or services provided by formal financial institutions, which includes microfinance institutions

(MFIs) [23]. Financial exclusion is a complex issue with multiple dimensions, impacting different segments of the population in each nation, especially in less developed countries. The supply-side factors causing the financial exclusion include regulatory constraints, availability of competing financial services with no or limited financial consumer protection requirements, prohibitive market factors, geographical/physical barriers and infrastructure and connectivity barriers. While demand-side factors include financial vulnerability caused by personal circumstances, low levels of financial literacy, reduced social and technological inclusion, cultural and psychological barriers and linguistic and educational barriers [24,22]. Possible causes for a decline in the supply of bank credit include events like bank runs or panic, government-imposed limits on bank lending, higher regulatory expenses, reductions in banks' capital reserves or deposit base, and monetary policies that lower the stock of bank deposits [19].

Promoting financial inclusion necessitates implementing policies that establish suitable legal and regulatory frameworks, strengthen the information environment, and ensure the education and protection of financial service users, while also addressing market issues that contribute to financial exclusion [22].

3.4. Access to Credit

Finance is an integrated part of any business and consumption activities. The financial institutions are equally important for the smooth flow of funds to the important uses throughout the country. It deals in providing financial assets and credit instruments. Credit stands as one of the important components of financial services for the world to attain economic progress and individual success. Credit is a legal arrangement between lenders and borrowers whereby the latter pledges to pay the lender back later, usually with interest, in exchange for something of value, such as cash or products and services. It is highly vital for the people to have access to credit from institutional sources as interest rates for credit obtained from institutional sources are regarded to be less than those from non-institutional sources [7].

'*Not having access to the credit market may lead to economic impoverishment that may, in turn, lead to deprivations such as undernourishment and homelessness as a result of the inability to take advantage of income-generating activities that require collateral or initial investment and use of credit'* [25]. Limited access to financial services particularly credit, among producers is a key factor contributing to inadequate agricultural productivity in the developing country [7]. Farmer with access to credit witnessed more productivity than farmer without access to credit [18]. When people have limited access to credit, their ability to spend is constrained, eventually leading to the lower level of economic growth. The Credit constraints also form as a decision factor for consumption. As credit availability increases, the borrowing among the people for the purpose of consumption also increases [17]. A reduction in bank loans may adversely affects firms that depend on banks as their primary source of financing, as well as households that depend, directly or indirectly, on banks for any form of loan. It either pushes these borrowers toward more costly forms of credit or restricts their access to credit entirely [19].

Difficulties related to account opening and conducting transactions in formal financial institutions are widespread in the northeastern region of India, primarily because of the considerable distance to financial service providers and limited local accessibility. When it comes to obtaining loans, challenges include physical remoteness from banking facilities, lack of convenient access to credit, unavailability of short-term borrowing options, complicated application procedures, high collateral demands, and insufficient awareness about eligibility, often stemming from limited financial education. Additional deterrents to relying on formal credit sources include high loan costs, uncertainty regarding repayment capacity, the absence of short-term loan products, and complications in pre-closing loan accounts [12].

4. Statement of the Problem

Despite concerted national and global initiatives to advance financial inclusion, significant barriers persist for marginalized and vulnerable populations, particularly in NER. Extensive literature underscores persistent challenges such as inadequate financial infrastructure, low financial literacy, social and gender disparities, and the digital divide that collectively hinder equitable access to affordable, appropriate financial services. In many rural and northeastern areas, large segments of the population lack a formal account. A substantial proportion of individuals still rely on non-institutional sources of finance, often incurring higher costs, restrictive conditions, and greater economic vulnerability. The disparities are further compounded by geographic isolation, limited financial literacy and infrastructural shortages. These exclusion gaps perpetuate economic vulnerability, limit participation in growth opportunities, and reinforce cycles of poverty among disadvantaged groups.

5. Research Gap

Existing research often highlights broad national progress and very little literatures on financial inclusion has been done in Arunachal Pradesh. The variations in credit access and levels of indebtedness between rural and urban households in Arunachal Pradesh, as well as disparities among different social groups and occupations have not been explored. This study addresses these gaps using the AIDIS report 2019 and provides the policy interventions required in Arunachal Pradesh to attain financial inclusion.

6. Objectives of the Study

- To assess the difference in indebtedness by comparing the average Amount of Outstanding Debt (AOD) and Incidence of Indebtedness (IOI) among rural and urban households in Arunachal Pradesh.
- To analyse the disparity in credit accessibility between institutional and non-institutional sources across regions and social groups.
- To propose some policy measures for enhancing formal financial inclusion.

7. Research Methodology

The study relies on secondary data, drawing insights from the latest All India Debt and Investment Survey (AIDIS) report, 2019. The All India Debt and Investment Survey, 8th in AIDIS series, was carried out as a part of 77th round of NSS from January to December 2019. Information was collected through two visits (Visit 1: January-August, 2019 and Visit 2: September-December, 2019) to the same set of sample households. In rural areas, survey was conducted in 5,940 villages covering 69,455 and 68,291 households during visit-1 and visit-2

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respectively. While in urban areas, the survey was conducted in 3,995 blocks covering 47,006 and 44,781 households in visit-1 and visit-2 respectively. The survey provides comprehensive information on key financial indicators, including the Average amount of Outstanding Debt (AOD) per household and Incidence of Indebtedness (IOI) across both rural and urban regions of India.

The average Amount of Outstanding Debt (AOD) is the average amount of cash dues per household and Incidence of Indebtedness (IOI) is the percentage of the indebted households. A basic comparison of AOD and IOI of households between Arunachal Pradesh and other North eastern states from the report has been made to explore levels of indebtedness between rural and urban households in Arunachal Pradesh, and overall financial inclusion. The use of financial services by households such as account holding and borrowing has been used to assess credit availability and accessibility in Arunachal Pradesh. The paper has explored the data of the average amount of cash dues per household and IOI by sources of credit, variations in interest rates, and the social groups accessing financial services.

8. Results and Discussion

8.1. Credit Availability and Accessibility

Inclusive financial markets mitigate poverty and inequality by empowering people and households to manage their expenditures, secure bank loans, and acquire insurance [26]. A major indicator used for assessing household access to financial services is the proportion of adults having either an individual or joint account with a regulated financial institution such as banks, credit unions, cooperatives, post offices, or microfinance institutions or who hold a mobile money account [23]. About half of the global adult population, representing over 2.5 billion individuals, lack an account with a formal financial institution [22]. Poverty rates in Indian cities notably declined when citizens were afforded enhanced access to financial and banking services. The bulk of those lacking access to financial services predominantly inhabit underdeveloped countries. Small and medium-sized firms (SMEs) generally rely more on trade credit and informal finance channels than larger corporations [21]. This poses a challenge for an individual to engage in certain productive investments and agricultural endeavours. The percentage distribution of the adult population (18 years and above) with bank deposit accounts by area and caste is shown in Table 1 given below.

Scheduled Commercial Bank, Regional Rural Bank, and Cooperative Bank are all included in this context under the term "Bank." Table 1 clearly shows that the percentage of adults in rural Arunachal Pradesh who have a bank deposit account is lower than that in urban areas. Although the low proportion of account holders reflect limited demand, substantial barriers such as high costs, geographical distance, and extensive documentation requirements continue to be major contributing factors [22]. In the state of Arunachal Pradesh, 84.9 percent of adults in urban area and 75.6 percent of adults in rural areas have a bank account.

Table 1. Percentage of Adult Population (18 years and above) having Deposit Accounts in Banks for North Eastern Region (NER) of India and All of India

State	In Rural Bank (SCB/ RRB/Co-operative Bank)					In Urban Bank (SCB/ RRB/Co-operative Bank)				
	ST	**SC**	**OBC**	**Others**	**All**	**ST**	**SC**	**OBC**	**Others**	**All**
Arunachal Pradesh	77.0	84.3	30.3	73.0	75.6	87.7	84.4	76.8	81.3	84.9
Assam	75.7	82.4	85.1	75.0	78.9	80.0	81.4	88.0	81.8	82.9
Manipur	64.3	72.4	67.8	74.7	66.4	71.3	82.9	74.8	90.4	76.4
Meghalaya	71.6	50.0	69.4	92.0	73.6	87.4	70.3	49.3	74.6	82.8
Mizoram	73.3	56.0	0.0	0.0	73.2	83.7	100.0	96.6	0.0	83.6
Nagaland	43.9	0.0	73.3	50.0	43.9	76.3	67.9	66.9	78.4	75.9
Sikkim	80.2	90.9	85.2	97.9	83.4	79.8	93.8	88.2	85.6	85.4
Tripura	83.9	87.4	89.1	87.8	86.7	95.2	93.0	94.1	94.1	93.9
All India	**80.4**	**84.9**	**85.0**	**85.1**	**84.4**	**80.4**	**83.6**	**84.9**	**86.7**	**85.2**

Source: All India Debt and Investment Survey (AIDIS) report, NSSO, 2019

However, in India, the proportion of adults with bank deposit accounts is almost the same for both urban and rural adults. Out of all the northeastern states, Tripura has the highest percentage of adults with deposit accounts in urban banks, followed by Sikkim and Arunachal Pradesh. The largest percentage of adults in the region's rural areas have bank deposit accounts in Tripura, Sikkim, and Assam. The lowest percentage of adult residents with bank deposit accounts in both rural and urban areas was found in Nagaland and Manipur. According to caste-based data, a comparatively higher proportion of people in other categories and OBCs have bank deposit accounts throughout India. In contrast, the distribution of castes in the northeastern states exhibits a variety of patterns. There are more adults from Scheduled Tribes (ST) who hold bank accounts in urban areas of states like Tripura, Arunachal Pradesh, and Meghalaya. The percentage of adults with bank deposit accounts is greater among SCs in Mizoram and Sikkim, OBCs in Mizoram and Tripura, and others in Tripura and Manipur.

Table 2. Percentage of Adult Population (18 years and above) having Deposit Accounts in Post Offices for North Eastern Region (NER) of India and All of India

State	In Rural Post Office					In Urban Post Office				
	ST	**SC**	**OBC**	**Others**	**All**	**ST**	**SC**	**OBC**	**Others**	**All**
Arunachal Pradesh	3.2	3.3	1.9	5.0	3.5	11.8	21.1	42.5	20.1	15.8
Assam	0.6	2.8	2.2	0.9	1.5	0.9	5.7	9.6	5.0	5.7
Manipur	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Meghalaya	0.5	0.0	0.0	1.3	0.5	4.9	0.9	0.4	4.1	4.4
Mizoram	0.4	0.0	0.0	0.0	0.4	0.9	0.0	0.0	0.0	0.9
Nagaland	0.4	0.0	0.0	0.0	0.4	2.4	0.0	0.0	0.0	2.1
Sikkim	1.4	1.7	1.5	0.0	1.4	0.8	3.5	3.6	2.1	2.3
Tripura	0.7	6.6	4.1	5.6	3.7	8.1	7.5	9.9	11.7	10.1
All India	**2.4**	**2.7**	**3.3**	**4.5**	**3.4**	**3.2**	**3.8**	**4.1**	**5.6**	**4.6**

Source: All India Debt and Investment Survey (AIDIS) report, NSSO, 2019

Table 2 shows the caste-wise percentage distribution of adults with deposit accounts in both rural and urban post offices, much like the preceding table. It is evident from comparing the two tables that the majority of people have bank accounts rather than post office accounts. There are more post office deposit accounts in Arunachal Pradesh's rural and urban areas than in India overall. However, when it comes to urban areas, Arunachal Pradesh has the largest proportion of adults with post office deposit accounts among the northeastern states and the highest proportion after Tripura in rural areas. No one had a post office deposit account while in Manipur.

According to the caste-wise data, in rural areas, there are significantly more post office deposit accounts for STs in Arunachal Pradesh, and for SCs, OBCs, and other groups in Tripura. In urban areas, each category has a higher percentage share of post office deposit accounts in Arunachal Pradesh. STs have post office deposit accounts in every northeastern state except Manipur.

8.2. Level of Indebtedness and Inclusion among rural and urban areas in Arunachal Pradesh and North-Eastern Region

Note: AOD: The average amount of cash dues per household.
IOI: The percentage of indebted households to total households.
Indebted Households: Households having cash loan outstanding.

Table 3. Share of Average Amount of Debt (AOD) per Household, and Incidence of Indebtedness (IOI) among Rural and Urban Households in for North Eastern Region (NER) of India and All of India

State	AOD (000' Rs)	
	Rural	Urban
Arunachal Pradesh	14	30
Assam	16	77
Manipur	15	24
Meghalaya	4	13
Mizoram	32	109
Nagaland	6	21
Sikkim	40	81
Tripura	17	33
All India	**60**	**120**

Source: AIDIS Report, 2019

The All India Debt and Investment Survey (AIDIS) report reveals that the average amount of debt (AOD) per household in rural India was Rs. 60,000. While in urban India, it was Rs. 120,000 in 2019, which is twice that of rural areas. Sikkim recorded the highest average household debt, amounting to Rs. 40,000, followed by Mizoram at Rs. 32,000 and Tripura at Rs. 17,000 in rural areas. However, in the case of urban areas, the state with the highest value of the average amount of debt was Mizoram, followed by Sikkim and Assam, with values of Rs. 109,000, Rs. 81,000, and Rs. 77,000, respectively. In Arunachal Pradesh, the AOD was Rs. 14,000 in the rural region, ranking sixth among the northeastern states of India in 2019. Conversely, it ranked fourth in the urban region, with an average cash debt of Rs. 30,000 per household. Meghalaya recorded the lowest AOD among the northeastern states in both urban and rural areas.

Table 4. Incidence of Indebtedness (IOI) (in percentage) by Credit Agency among Rural and Urban Households in for North Eastern Region (NER) of India and All of India

State	Rural				Urban			
	Institutional	Non-institutional	Both	All	Institutional	Non-institutional	Both	All
1	2	3	4	5	6	7	8	9
Arunachal Pradesh	5.9	7.8	1.4	15.0	9.4	11.9	0.8	22.1
Assam	15.4	3.1	0.6	19.2	18.6	1.2	0.2	20.0
Manipur	2.2	14.7	0.6	17.5	4.7	9.4	0.3	14.5
Meghalaya	5.3	3.5	0.4	9.2	4.0	1.0	0.1	5.1
Mizoram	8.4	4.4	0.4	13.2	16.5	2.7	0.5	19.7
Nagaland	2.2	4.2	0.1	6.6	5.1	3.8	1.3	10.2
Sikkim	11.3	7.0	0.5	8.8	14.9	5.6	1.4	22.0
Tripura	18.2	2.6	0.4	21.2	19.1	0.7	0.5	20.3
All India	**17.8**	**10.2**	**7.0**	**35.0**	**14.5**	**4.9**	**3.0**	**22.4**

Source: All India Debt and Investment Survey (AIDIS) report, NSSO, 2019

According to IOI, the proportion of indebted households in India's rural area is higher than that in the urban area in 2019. In rural areas, households with debt accounted for 35 percent of all households in the same year. However, in urban India, households with debt make up 22.4 percent of all households. The state of Tripura has the largest percentage of rural households with debt of any North Eastern states, with 21.2 percent IOI. Assam and Sikkim have the next highest percentages, at 19.2 percent and 18.8 percent, respectively. In contrast, Arunachal Pradesh has the largest percentage of indebted households (22.1 percent) in urban areas. Tripura, with an IOI of 20.3 percent, ranks second, closely followed by Assam with 20.1 percent. Among the other states of the NER, the state with the lowest percentage of indebted households is Nagaland in rural areas and Meghalaya in urban areas, with IOI values of 6.6 percent and 5.1 percent, respectively.

8.3. Household Indebtedness by Credit Agencies

Table: 5. Percentage Share of Outstanding Cash Debt of Rural and Urban Household from Institutional and Non-Institutional Sources in for North Eastern Region (NER) of India and All of India

State	Rural		Urban	
	Institutional	Non-Institutional	Institutional	Non-Institutional
Arunachal Pradesh	68.8	31.2	81.6	18.4
Assam	88.3	11.7	98.7	1.3
Manipur	40.6	59.4	58.4	41.6
Meghalaya	88.5	11.5	97.9	2.1
Mizoram	94.8	5.2	96.4	3.6
Nagaland	86.1	13.9	91.9	8.1
Sikkim	86.4	13.6	95.9	4.1
Tripura	93.7	6.3	98	2
All India	**66.1**	**33.8**	**87.1**	**12.9**

Source: All India Debt and Investment Survey (AIDIS) report, NSSO, 2019.

The estimates of institutional and non-institutional sources of outstanding cash debt are based on the AIDIS 2019 report. In rural India, 33.8 percent of the outstanding cash debt in 2019 was sourced from non-institutional agencies, while 66.1 percent came from institutional

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sources. The disparity between institutional and non-institutional sources of outstanding cash debt is wider in urban India than in rural India. In urban areas, 87.1 percent of the outstanding cash debt originated from institutional sources, whereas only 12.9 percent was derived from non-institutional sources. The share of institutional sources dominates in almost all North Eastern states, except in the rural areas of Manipur, where 59.4 percent of the outstanding cash debt was obtained from non-institutional sources. Among the North Eastern states, the share of outstanding cash debt from institutional sources is the highest in Mizoram for rural areas and Assam for urban areas.

In Arunachal Pradesh, institutional sources account for a greater portion of outstanding cash debt (68.8 % in rural areas and 81.6 % in urban areas, respectively). In Arunachal Pradesh's rural areas, the proportion of outstanding cash debt[1] originating from institutional sources is higher than the national average. For non-institutional sources, the reverse is true. However, non-institutional sources also play an essential role in providing credit to the rural household in Arunachal Pradesh. The share of outstanding cash debt from non-institutional agencies, however smaller than the share of institutional sources, is fairly high with 31.2 percent which is the second largest share among north eastern state after Manipur. A higher share of outstanding cash debt from any particular source reflects a higher level of dependency on that credit source. This suggests that a significant majority of households rely not just on institutional sources but also on non-institutional sources for satisfying considerable amount of their credit requirement. Thus, it can be inferred that the non-institutional credit agencies play a key role in enabling loans to rural households in Arunachal Pradesh. The debt burden of both rural and urban households is substantial in the case of institutional sources.

8.4. Household Indebtedness by Social Categories

Many individuals, particularly small and marginal farmers in less developed regions, remain excluded from the formal financial sector due to perceptions of low creditworthiness by institutional lenders [28,29]. Consequently, informal lending markets continue to play a dominant role, often subjecting borrowers to exorbitant interest rates and exploitative conditions [1,30]. Such reliance on informal mechanisms not only perpetuates cycles of indebtedness but aslo exacerbates economic vulnerability and social exclusion.

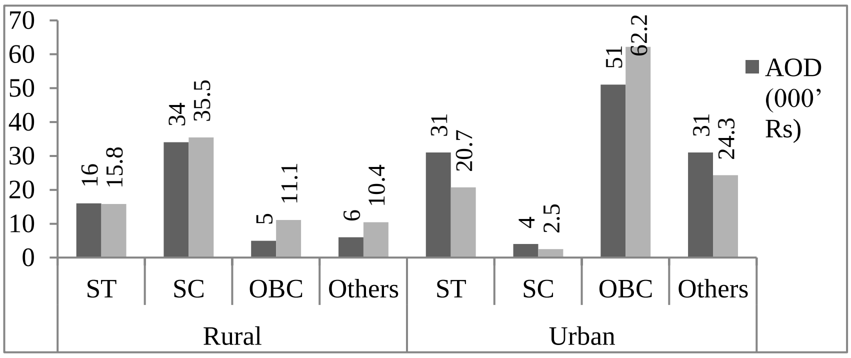

Figure 1. Distribution of Average Amount of Debt (AOD) per household and Incidence of Indebtedness (IOI) by Social Group in both Rural and Urban Arunachal Pradesh. *Source*: All India Debt and Investment Survey (AIDIS) report, 2019

[1] Outstanding cash debt: The total principal as well as interest amount of a debt that has yet to be paid.

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Figure 1 presents data on the average Amount of Outstanding Debt (AOD) per household and the Incidence of Indebtedness (IOI) for Arunachal Pradesh, drawn from the 77th round of the NSSO survey. The percentage of AOD per household and IOI has been categorized by social group. The proportion of indebted households is highest among those belonging to the Scheduled Caste (SC) category in rural areas of Arunachal Pradesh, followed by households belonging to the Scheduled Tribe (ST) category. The average outstanding cash debt per household and IOI for the SC category are Rs. 34,000 and 35.5 percent, respectively. ST households rank second in rural areas, with an AOD of Rs. 16,000 and an IOI of 15.8 percent. The lowest levels of AOD and IOI are recorded among the Other Backward Classes (OBC) and Others categories, respectively.

In urban areas of Arunachal Pradesh, the AOD per household and IOI are highest among households belonging to the OBC category. OBC households have the largest outstanding debt per household, with an AOD of Rs. 51,000 and an IOI of 62.2 percent. Both AOD and IOI are recorded at their lowest levels among households belonging to the SC category.

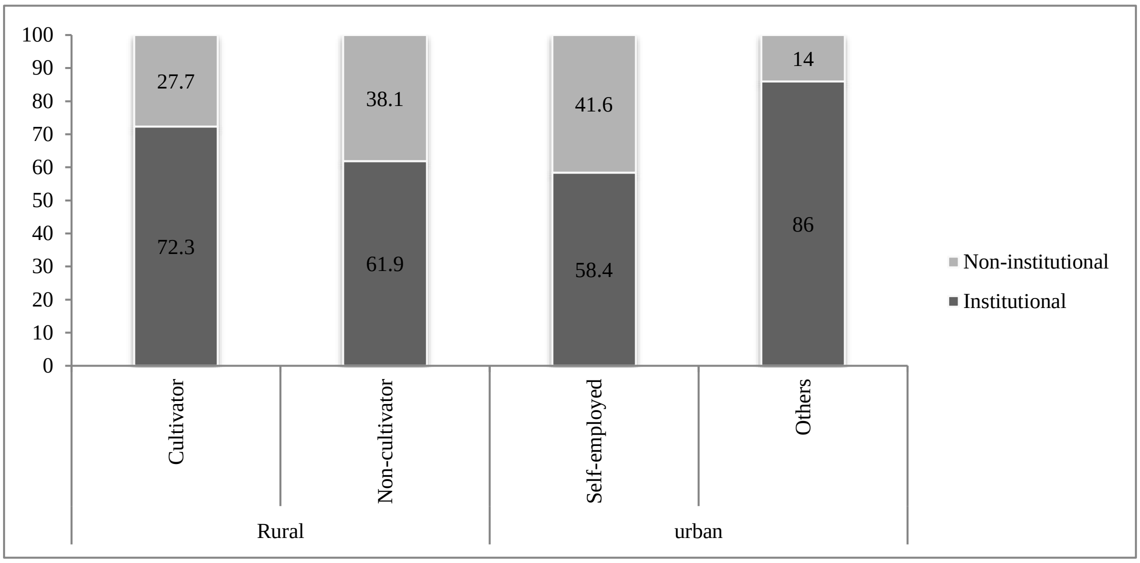

Figure 2. Percentage Share of Outstanding Cash Debt of Rural and Urban Household from Institutional and Non-Institutional Sources by Occupation Category for Arunachal Pradesh. *Source*: All India Debt and Investment Survey (AIDIS) report, 2019

In 1951, 90 percent of the outstanding debt owed by farmer households came from non-institutional sources. However, the share of non-institutional debt dropped to 36 percent in 2013 [7]. In 2019, institutional sources accounted for the majority of credit for both cultivator and non-cultivator households in rural area, as well as for self-employed and other households in urban area of Arunachal Pradesh. In rural area, the percentage of cultivator households' outstanding cash debt that comes from non-institutional sources is 27.7 percent, while the percentage that comes from institutional sources is 72.3 percent. Whereas, the share of outstanding cash debt of non-cultivator households from institutional sources is 61.9 percent and non-institutional sources is 38.1 percent. Thus, non-cultivator households are more dependent on the non-institutional sources for financing as compared to cultivator households in rural areas of Arunachal Pradesh.

The share of outstanding debt of self-employed households from institutional sources does not greatly differ from the share of outstanding debt from non-institutional sources. The share of institutional and non-institutional sources reaches 58.4 percent and 41.6 percent, respectively, for self-employed households in urban area. While, households under others group have 86 percent of outstanding cash debt from institutional sources and 14 percent from non-institutional sources. Thus, among all four categories of occupations, self-employed people rely heavily on non-institutional credit sources.

8.5. Interest Rates Charged by Institutional and Non-Institutional Sources

On the one hand, credit charges on farmers pose a serious hindrance to their economic growth in the underdeveloped countries [31]. On the other hand, approximately 40 countries classified as developing or in transition have instituted some form of interest rate cap, and this policy restricts disadvantaged populations' ability to access financial services [32]. Table 6 shows that in both rural and urban areas, the majority of the existing cash debt from institutional sources was provided at interest rates lower than 15 percent in 2019. In Assam, 1.5 percent of rural households' outstanding debt has interest rates between 30 and 50 percent, which is the amount of debt with the highest interest rate from institutional sources in rural area. In case of urban area, the highest is registered in Manipur. Outstanding cash debt of 97 percent and 83.2 percent in rural and urban area, respectively, is highest at rate below 15 percent in Arunachal Pradesh.

Table 6. Distribution of Outstanding Cash Debt with Interest Rate from Institutional Agencies (in percentage): for North Eastern Region (NER) of India and All of India

State	**Rural**					**Urban**				
	Nil*	**Below 15%**	**15-30%**	**30-50%**	**50-100%**	**Nil***	**Below 15%**	**15-30%**	**30-50%**	**50-100%**
Arunachal Pradesh	1.4	97	1.7	0	0	1	83.2	15.8	0	0
Assam	0.2	78.5	20	1.5	0	0.1	94.8	5.2	0	0
Manipur	0.6	96.7	1.3	1.4	0	0.4	86.7	7.4	5.4	0
Meghalaya	0	100	0	0	0	0.1	95.1	4.7	0	0
Mizoram	0	99	0.9	0	0	0	100	0	0	0
Nagaland	1.3	93.6	3.3	0	0	0.2	98.3	1.5	0	0
Sikkim	0.1	99.9	0	0	0	1	99	0	0	0
Tripura	0.4	63.5	36.1	0	0	0.9	76.6	22.4	0	0
All India	**1.3**	**90.5**	**7.8**	**0.2**	**0**	**0.3**	**93.2**	**6.3**	**0.1**	**0**

*interest-free
Source: All India Debt and Investment Survey (AIDIS) report, 2019

In India, institutional sources account for 1.3 percent and 0.3 percent of total outstanding cash debt in rural and urban areas, respectively, with no interest charged. The percentage of outstanding cash debt from institutional sources at zero interest rates in Arunachal Pradesh is 1.4 percent in rural areas and 1 per cent in urban areas, which is higher than the national average and the highest in the northeast region. The most dominant rate of interest at which the outstanding cash debt is highest in both rural and urban areas of northeastern region and India is rate below 15 percent followed by the rate 15-30 percent.

Table 7. Distribution of Outstanding Cash Debt with Interest Rate from Non-Institutional Agencies (in percentage): for North Eastern Region (NER) of India and All of India

State	Rural					Urban				
	Nil*	**Below 15%**	**15-30%**	**30-50%**	**50-100%**	**Nil***	**Below 15%**	**15-30%**	**30-50%**	**50-100%**
Arunachal Pradesh	40.1	57.7	2.0	0.0	0.0	50.4	10.6	38.9	0.0	0.0
Assam	13.2	54.0	13.4	3.4	16.0	80.6	9.3	6.4	3.1	0.6
Manipur	11.0	8.2	3.7	56.7	20.3	8.8	1.1	9.9	69.2	11.0
Meghalaya	83.0	3.5	12.6	0.8	0.0	52.7	0.0	36.6	10.7	0.0
Mizoram	75.7	17.2	7.2	0.0	0.0	62.8	34.5	2.7	0.0	0.0
Nagaland	80.3	9.6	1.8	0.0	8.4	67.5	32.5	0.0	0.0	0.0
Sikkim	57.8	31.0	7.6	3.2	0.4	70.9	22.8	6.3	0.0	0.0
Tripura	23.0	9.2	49.5	17.4	0.7	33.5	5.5	6.5	54.5	0.0
India	**20.2**	**6.6**	**49.8**	**18.7**	**4.5**	**31.4**	**9.9**	**38.4**	**16.1**	**4.3**

*interest-free
Source: All India Debt and Investment Survey (AIDIS) report, 2019

Table 7 depicts the distribution of outstanding cash debt with interest rate from non-institutional agencies in the state of Arunachal Pradesh and NER. In case of non-institutional credit sources, the largest portion of outstanding cash debt comes at interest rates between 15 and 30 percent in India. Among the non-institutional sources, friends and family are essential in providing credit and typically offer zero-interest financing. In terms of the percentage of rural areas having outstanding cash debt that is interest-free, Meghalaya leads the pack with 83 percent, followed by Nagaland and Mizoram at 80.3 percent and 75.7 percent, respectively. Assam has the largest percentage of outstanding cash debt with no interest rate in urban areas, at 80.6 percent. With 70.9 percent and 67.5 percent of the total outstanding cash debt at zero interest, respectively, Sikkim and Nagaland rank second and third.

Among the NER, the credit from the non-institutional sources is most expensive in Manipur where the highest outstanding cash debt were found to be concentrated at a 30-100 percent rate of interest. The outstanding cash debt from non-institutional sources in rural area is as high as between 50-100 percent in the states like Manipur (20.3 percent) , Assam (16 percent), Nagaland (8.4 percent), Tripura (0.7 percent) and Sikkim (0.4 percent). While in urban area, the same has been found in Manipur (11 percent) and Assam (0.6 percent).

The percentage distribution of outstanding cash debt by interest rate from institutional and non-institutional lending sources in Arunachal Pradesh's rural and urban areas is shown in Table 8. In rural areas of the state, the bulk of borrowings from both institutional and non-institutional loan sources have interest rates between 10 and 15 percent, as shown by the data presented in Table 8. In urban areas, the majority of borrowings from institutional sources had interest rates between 10 and 15 percent, whereas the majority of borrowings from non-institutional sources had no interest rate at all. The high percentage of zero-interest borrowing from non-institutional sources in both rural and urban areas indicates that a large number of people have access to these loans. In rural Arunachal Pradesh, the highest borrowing rate of interest from both institutional and non-institutional sources ranges from 15 to 20 percent; in urban areas, the highest borrowing rates of interest for institutional and non-institutional sources are 15 to 20 percent and 20 to 25 percent, respectively. Therefore, even though zero-interest outstanding cash debt from non-institutional agencies is more common in urban areas, 31.2 percent of outstanding cash debt occurred at interest rates of 20 to 25 percent, which is the highest rate of interest charged by any other institution in Arunachal Pradesh.

Table 8. Percentage Distribution of Amount of Outstanding Cash Debt by Rate of Interest from Credit Sources in Rural and Urban Arunachal Pradesh (India).

Rate of interest (%)	Rural		Urban	
	Institutional	Non-Institutional	Institutional	Non-Institutional
0	1.4	40.1	1	50.4
<6	5.9	6.9	0.9	8.7
6-10	28.1	1.6	29.9	0
10-15	63	49.4	52.4	1.9
15-20	1.7	2	15.8	7.7
20-25	0	0	0	31.2
25-30	0	0	0	0
30-50	0	0	0	0
50-100	0	0	0	0
Total	**100**	**100**	**100**	**100**

Source: All India Debt and Investment Survey (AIDIS) report, 2019

9. Conclusions

The study reveals that financial inclusion in Arunachal Pradesh, India, is characterized by limited access to formal banking infrastructure and considerable reliance on non-institutional credit sources, especially among rural households. Urban areas show higher levels of account holding, indebtedness, and average debt amounts, yet even there, institutional channels are insufficient to meet overall credit demand. The analysis further indicates persistent disparities in financial access and indebtedness across regions, social groups, and sources of credit with scheduled tribes, marginalized communities, and rural populations most acutely affected.

Despite national progress and targeted schemes, the underdeveloped banking network, high costs, and low financial literacy continue to impede meaningful inclusion in the state. These gaps highlight the need for strengthened outreach of banking and cooperative institutions, the expansion of financial literacy initiatives, and improved accessibility to affordable credit schemes tailored for local realities.

Therefore, advancing financial inclusion in Arunachal Pradesh and the wider northeastern region demands not only infrastructural improvements, but also focused policy interventions that address both the supply and demand side barriers to equitable credit access and ensure the benefits of formal finance extend to the most excluded groups in the population.

10. Policy Implications

Based on the findings of the study, the following policy suggestions are proposed to advance financial inclusion and improve credit access in Arunachal Pradesh.

- Strengthen Cooperative and Regional Rural Banks: Enable the expansion of cooperative and regional rural banking networks to penetrate remote and underserved villages. Prioritizing these institutions will help address physical access barriers and meet local credit requirements more efficiently.

- Promote Digital and Financial Literacy Initiatives: Implement targeted financial education programs, especially in rural and marginalized communities. Enhancing digital literacy will empower publics to utilize digital payment platforms and banking services, reducing information asymmetry and barriers to participation in formal finance.
- Expand Inclusive Credit Schemes: Scale up the coverage and outreach of national financial inclusion initiatives, such as Pradhan Mantri Jan Dhan Yojana (PMJDY), MUDRA loans, and Self-Help Group (SHG)-Bank Linkage programs. Focus on adaptation to the region's unique socio-economic and geographic challenges, ensuring that scheme guidelines and support mechanisms are locally relevant.
- Improve Institutional Lending Processes: Simplify loan application procedures, reduce documentation requirements, and eliminate excessive collateral demands to make institutional credit more accessible, particularly for smallholder farmers, micro-entrepreneurs, and low-income households in rural and frontier areas.
- Introduce Flexible Credit Products: Develop short-term and flexible credit products catering to local livelihood cycles and consumption patterns. This approach addresses the individual’s needs for varied loan amounts, repayment schedules, and options for premature account closure, while minimizing dependence on informal lenders.
- Leverage Technology for Service Delivery: Invest in mobile banking infrastructure, digital identification systems, and agent-based models such as Banking Correspondents (BCs). These innovations can extend the reach of formal financial services to otherwise inaccessible villages and facilitate safer, more convenient transactions.
- Foster Collaboration Between Stakeholders: Encourage cooperation among government agencies, financial institutions, civil society, and local governance bodies for more efficient implementation and monitoring of inclusion policies. Multi-sectoral engagement will enable holistic solutions and better resource alignment.

These policy suggestions collectively aim to reduce the region’s reliance on informal credit channels, promote inclusive and sustainable financial sector growth, and support broader socio-economic development objectives in Arunachal Pradesh and the North East.

Multidisciplinary Domains

This research covers the domains: (a) Economics and (b) Finance.

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Conflicts of Interest

The authors declare no conflict of interest.

Declaration on AI Usage

The article has been prepared without the use of AI tools.

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