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Factors Affecting Access to Agricultural Finance in India: An Empirical Validation from Farmers' Perspectives

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Abstract

The paper is an attempt to study the factors affecting access to agricultural finance in the Peren district of Nagaland, India. Multi-stage purposive sampling technique was used to select the respondents based on criteria of financial inclusion and loan amount sanctioned. Peren district was selected purposively for the study based on a unique land-holding pattern ie., almost 90 percent of the area is privately owned. Two blocks viz, Jalukie and Athibung were selected purposively from the district under study considering their sphere in paddy production. A pre-tested structured questionnaire was used to collect the data relating to the perception of farmers from 10 villages taking 5 from each selected block. A total of 150 households (taking 15 from each village) that had accessed credit in the last one year were randomly selected. The

exploratory factor analysis technique was used to retrieve the factors influencing access to agricultural finance on 20 items based on the literature review. The study retrieved 4 factors viz., institutional factor, procedural factor, infrastructural support factor, and farm-specific factor are the major determinants of agricultural finance. The findings of this research revealed that there is still a long way to go if the farmers are to access and utilize agricultural finance. The policy frameworks and reforms in the financial sector enable more outreach of the existing institutions to rural areas as well as the emergence of new players. There is a need to rethink the role of interventions in meeting the financial requirements of the farmers with a vision of self-confidence and sustained agriculture growth. In this connection, an efficient and operational financing scheme can be developed which will assist to reduce farmers' constraints level arising from poor socio-economic shortages.

Keywords: validation, agricultural finance, factors, farmers' perspectives, Peren district

1. Introduction

1.1 Introduction to the Problem

Agricultural finance is the delivery of financial services to farmers/farming enterprises for their agriculture production activities (IFAD, 2012). Agricultural finance typically means analysing, exploring, and probing the financial elements of the farm business. It signifies the financial analysis of borrowing of funds and reserves by farmers, the operation of farm lending agencies, associations, and organization's interest in agriculture loans (Murray & Nelson, 1960). Tandon & Dhondyal (1962) regarded agricultural finance as a subordinate of agricultural economics which negotiates with financial and economic resources that are connected to individual farm divisions.

The agricultural credit is considered as a promoter that stimulates other factors of agricultural production and makes underused and unused capacities functional for the increased quantum of production (Ijere, 1998). The credit required for agriculture and its allied sector may be classified into production credit and investment credit. The production credit is the crop loans that are largely used for funding the working capital requirements of farmers, while investment credit is the term loans utilized for asset generation at the farm level, thus accentuating capital formation. Capital formation through investment in agriculture helps in improving the stock of equipment, tools, and productivity of resources employed, which in turn, enables the farmers to use their resources, particularly land and labour, more productively (Evenson et al., 1999). The investment in agriculture is normally comprised of public sector and private sector investments depending on the farmers' requirements for augmenting the productivity of natural resources or for undertaking activities that could enhance the income sources of farmers. The studies evidenced that the relation between the term loans disbursed and private sector capital formation in agriculture is highly positive, indicating a close association between them (Dave, 2014; Akdemir, 2012; Tripathi & Prasad, 2009). This confirms that the term loans play a significant role in satisfying the capital needs of the farms which in turn enhances the efficiency of resources. However, the rural farmers hesitate to apply for credit to a formal institution due to the high-interest rates of institutions, the bank's distance from homes, unnecessary delay in disbursement of the loan, complicated procedures, non-cooperation of the

revenue department and bank, and security used for the loan from the institutional sources (Rashed et al., 2016; Dey et al., 2022). Hence, it is crucial to validate the factors affecting access to agricultural finance empirically in a regional context.

1.2 Importance of the Problem

Agriculture is the main source of income for 65 percent of the families in India and contributes around 40 percent of the national income. But due to climatic conditions and financial constraints, the farmers are not in a position to outclass their production. The average size of landholding has been continuously decreasing on account of an increasing number of landholders, from an average of 2.28 hectares in 1970-71, it went down to 1.08 hectares in 2015-16 (GoI, 2015-16). Approximately, two-thirds of these holdings are marginal (<1 ha) with an average size of 0.39 ha only (Agricultural Census, 2014). Bringing new technologies and practices to such a large number of smallholders scattered over a vast countryside and integrating them with the modern input and output markets is a huge challenge for Indian agriculture (Babu & Joshi, 2019). Such tiny holdings by the large majority of the farmers are neither viable nor sustainable for a country with billion-plus mouths to feed. Besides these, continuous decline in the average size of land holdings coupled with the fragmentation of landholdings, lack of off-farm occupations, and inheritance laws of an equal division of property among heirs led to the division of land into small blocks. Yet, these small and marginal farmers have a poor economic base which consequently has an adverse effect on the growth of the agriculture sector (Singh & Gupta, 2020). In order to resuscitate this situation, accessibility of finance is *sin qua non* for the farmers to build a vibrant agricultural sector. The agricultural credit is one of the vital prerequisites of farmers which facilitates them to meet the investment as well as working capital requirements (Fulwinder, 2016). Like other sectors, the availability of credit for the agriculture sector must be easy, adequate, and timely. Despite a large network of financial institutions, a large portion of the rural population is continuously neglected by the formal banking sector in India (Dey et al., 2022). Studies evidenced that the long gestation period, lack of trained technical staff to identify the potential activity in this field, poor eligibility, and security problems are some of the reasons behind insufficient credit flow to the agriculture sector (Umanath et al., 2018; Kumar et al., 2017). Hence, the identification of factors affecting access to agricultural finance is an essential academic subject, particularly in the Peren district of Nagaland.

1.3 Relevant Literature Review

The attractiveness of the review lies in the datum that heights the contextual knowledge of the research problem. It provides an orientation to the problem and eliminates the possibility of unnecessary duplication of efforts in the field of investigation. The esteemed information and research techniques may be gained from the previous research studies. The following paragraphs have highlighted the review of relevant studies conducted in India and abroad.

Katchova (2005) analysed the supply of agricultural loans using farm-level data and concluded that many factors such as gross farm income, risk management strategies, the age of the person using the bank loan and risk aversiveness have effects on the use of agricultural loans. Kohansal & Mansoori (2009) tried to identify the main factors affecting farmers' bank

loan repayment performance in the Khrorasan-Razavi province of Iran. The study observed that the loan interest rate is the most important factor affecting the agricultural bank loan repayment performance followed by farming experience and application cost. Enya and Alimba (2008) investigated the factors affecting the bank loan supply offered to farmers in Nigeria and concluded that positive repayment behaviour in the agricultural sector encourages banks to offer agricultural loans to farmers and affects lending rates positively. Kumar et al. (2010) identified the factors responsible for the use of institutional agricultural credit by farming households considering the variables viz., age of the household head, gender of the household, household size, operated land size, social group, educational level, and household type. The study determined that there is an increase in the requirement for credit when there is an increase in age; an increase in education level, the household is headed by males, increase in household size and farm size. Liu and Li (2010) studied the influencing factors of rural household credit and loan demand in Jiangsu province of China using a binary probit model with variables like age of householder, education level, the scale of management, labour burden, gross household income, productive expenditure, living expenditure, education expenditure, understanding degree of policies. The study found that the factors like householders' age, years of education, household management scale, expenditure on production, living and educational expenditure have a positive impact on rural credit and demand for loans. Ghosh (2010) found that access to institutional credit has positively significant effect on the level of farm mechanization in West Bengal. Nishida (2013) conducted a study on agricultural productivity differences and credit market imperfections. The study concluded that credit market imperfections are higher in poor and developing countries where agricultural productivity is lower when compared to rich nations with well-developed credit markets. Yano and Lanusosang (2013) articulated that traditional agricultural knowledge is deteriorating at an alarming rate due to the impact of globalization in spite of the fact that new technology and machinery tools have made the work much easier and faster. The indigenous knowledge, rich culture, and traditions practiced in Nagaland for agricultural management have a positive vibration but such practices have neglected the sensitive side of the world like the environment which has been loosening the grip of agricultural sustainability in the region.

Rahman et al. (2014) observed a positive relationship between credit and agricultural productivity. The credit qualifies the farmers to purchase high-yield variety seeds, fertilizers, and pesticides, and agricultural yield increases because of adequate and timely inputs. The timely provision of the appropriate amount of loan may augment agricultural productivity. Narayanan (2015) examined the productivity of agricultural finance in India and revealed that an increase in credit flow in nominal terms leads to an increase in fertilizers consumption, pesticides use, tractor purchases, etc. Hence, input use is highly sensitive to credit flow. Akudugu (2012) in an estimation of the determinants of credit demand by farmers in Ghana by constructing a logit regression model exposed that the age of farmers, literacy, type of crop grown, savings, farm size, gender, political affiliations, membership of social groups, and distance from residences of farmers to the rural banks were the significant determinants of credit demand by farmers. Barot and Patel (2015) opined that the scope of agriculture finance was limited to increasing productivity by the introduction of high-yielding seeds, use

of chemical fertilizers and pesticides, and availability of institutionalized credit for purchasing the preceding inputs. The study reveals that although the institutional credit to the agriculture sector is increased in quantum, serious efforts are required to provide it to the right kind of people, at right time, in the right places, and in the right quantity which will boost the Indian agriculture sector in the right way. Zhang et al. (2015) studied the factors influencing entrepreneurial farmers' formal financial credit demand and credit constraints in Sichuan and Chongqing in China. The study found that household population, degree of understanding of loan conditions and procedures, and hiring of labour for farming have a positive relationship while per capita household income, the distance between the location of farm household and financial institution has a negative relationship with the demand for credit. Subramanian and Shivananjappa (2017) identified the problems faced by the farmers in obtaining institutional credit which include the non-availability of the loan in time, the procedure for obtaining the credit was more expensive, inadequate amount of loan sanctioned against the actual requirement, the transport cost and document expenses. The farmers listed out the problems they faced in repaying the credit were crop failure, failure of monsoon, the expectation of waiving off loans by the government, lower yield, an increase in the cost of cultivation, decrease in the market value of the harvested produce etc. Umanath et al. (2018) analysed the impact of major determinants of participating in formal credit market and amount of credit borrowed at the household level in rural India. Heckman sample selection model was employed to analyse the functional relationship between the amount of credit availed and household-level characters. The study demonstrated that the larger farm size, Kissan credit card and bank account holding were the major factors determining the accessibility of amount of formal agricultural credit.

Ramashia (2019) examined the socioeconomic and loan factors that influence loan repayment of MAFISA-funded farmers in the Umkanyakude district municipality of South Africa by employing a logit model to identify the explanatory for loan default. The study found that age, gender and education were not significant in determining loan repayment. On the other hand, land size, loan cycle, and loan amount were significant in influencing loan repayment. Kambali & Niyaz (2021) studied the requirements and policy interventions in the domains of farm financing based on mostly secondary data collected from the Reserve Bank of India and from several annual documents. The study found that most of the treatments relating to policy intervention recommended in the past were not successful for various reasons. However, if such measures had been undertaken at that time, India would have ranked among the top countries in terms of access to finance. Tchamba (2021) analysed the effect of access to credit on the technical efficiency of farms in rural areas of Cameroon on a sample of 545 farm households, using the data envelopment analysis (DEA) model and the censored Tobit model. Two main results emerge from our analysis. The study found that on average, the level of technical efficiency of farms is 56.78 percent; showing the possibility of substantial efficiency gains. It is also indicated that the farm size, association membership, and fertilizer expenditure negatively affect technical efficiency, while access to credit, age, and education increase technical efficiency. Solo & Kikhi (2021) opined that the farming system is the combination of resources in farming, sustaining ecological balance and raising socio-economic status of the farming community. Jhum cultivation, alder tree-based and zabo

system are traditional farming systems that are still dominant in Nagaland along with indigenous techniques and methods used by the farmers to meet the requirements of the population. The paper highlighted that with the integration of livestock, crop production, and fruit cultivation, creation of employment is adequate and income may be generated. Taremwa et al. (2022) identified the determinants of access to agricultural credit among rice and maize smallholder farmers in Rwanda using a cross-sectional survey design. Data were collected using structured interviews and questionnaires and were analyzed using a binary logistic regression model. The study indicated that both individual and institutional factors determine access to agricultural credit among smallholder maize and rice farmers in Rwanda, the institutional factors were more important than individual farmer characteristics in determining access to credit.

1.4 Research Gap and Contribution

Although credit is an important basis for farm progress and infrastructural amplification, only a few studies are available in field-level investigation of factors convincing the claim for investment credit for agriculture in the context of the study area. Consequently, the result of the study may be helpful to the institutions granting agriculture credit, policy-makers and other officials of the banking and agricultural sector to appreciate the dynamics and barriers prevailing among farmers in availing the credit. This study will also provide information to the researchers for further studies of this nature.

1.5 Necessity of the Study

The agriculture and allied sector have emerged as the most robust sector of the Indian economy during the post covid-19 pandemic, with positive growth rates and increasing production. As per estimates, the sector employs over 50 percent of the workforce and contributed to around 20 percent of the country's gross value added in 2020-21 (GOI, 2021). Therefore, the need for agriculture finance in this present time is more than earlier. From the very beginning, the prime source of agricultural credit in India was moneylenders. After independence, the Government adopted the institutional credit approach through various agencies like co-operatives, commercial banks, regional rural banks etc. to provide adequate credit to farmers, at a cheaper rate of interest (Kohansal et al., 2008). Moreover, with the growing modernisation of agriculture during the post-green revolution period, the requirement for agricultural credit has increased further in recent years. Farmers take this assistance particularly to accomplish their production needs and buy various kinds of farming instruments (Satish, 2006). Moreover, the farmers need to meet the requirements of agricultural marketing, post-harvesting storage, and transport of produce, supply of power, need for good quality seeds, procurement of fertilizers, diseases, and issues like low rainfall, meeting the risks like damage due to pests, etc (Yadav, 2017). Hence, in the context of the immense credit need of the farmers, it is essential to validate the availability of agricultural finance and the related factors which influence its accessibility.

2. Method and Techniques

2.1 Objectives of the Study

Conceiving the idea from the literature review and research problem, the objective of the paper is set as to examine the factors distressing the access to agricultural finance in the Peren district of Nagaland, India.

2.2 Research Approach and Sampling Procedure

Multi-stage purposive sampling technique was used to select the respondents based on criteria of financial inclusion and loan amount sanctioned. Peren district of Nagaland was selected purposively for the study based on a unique land-holding pattern i.e., almost 90 percent of the area is privately owned (GoN, 2021). Two blocks viz, Jalukie and Athibung were purposively selected from the district under study considering their domain in paddy production. A pre-tested structured questionnaire was used to collect the data relating to the perception of farmers from 10 villages taking 5 from each selected block. A total of 150 households (taking 15 from each village) that had accessed credit in the last one year were randomly selected. To reach the sample respondents, the researchers visited the villages and reached the farmers by visiting their farms. The farmers were approached and asked to participate in the survey. They were also asked whether they used agricultural bank loans, and if the response was affirmative, then the researchers read the questions in the survey and the farmers responded to them accordingly. Table 1 shows the sample distribution of this research.

Table 1. Sample distribution

Blocks Selected	Village Considered	Number of Farmers Selected
1. Jalukie Block	1. Jalukie Village	15
	2. Mhaikam	15
	3. Sanziurram	15
	4. Jalujie B	15
	5. Rangkaidai	15
2. Athibung Block	1. Buisampikam	15
	2. Old Buisumpui	15
	3. New Buisumpui	15
	4. Buisampuiram	15
	5. Buisampuilua	15
Total		150

2.3 Variables and Measures

The respondents (farmers) rated the extent to which they support 20 items (criteria) as shown in the analysis for access to agricultural credit by a five-point Likert-type scale, ranging from '1= strongly disagree' to '5 = strongly agree'. The demographic variables included in the

survey were age, size of the family, gender, education levels of farmers, and the reasons for using the agricultural loan. The data analysis has been done using Statistical Package for Social Sciences (SPSS-Version 21). Besides, descriptive statistics, Cronbach's alpha for data integrity, KMO and Bartlett's test of sample adequacy, and the principal component analysis were used to retrieve the factors influencing access to agricultural finance on 20 selected items based on the literature review.

2.4 About the Study District

Peren District was declared a full-fledged Revenue District on 24 January 2004, with a geographical area of 1799 sq. km and a population of 94,954 persons with a density of population of 41 per sq. km (Census of India, 2011). There are 7 administrative headquarters, 4 rural development blocks, 86 villages, and 21 settlements (GoN, 2021). The district is known as '*The Green District of Nagaland'* with the highest concentration of flora and fauna of all districts in Nagaland, lies in the extreme south-west of Nagaland, is 100 km from Kohima, the capital of Nagaland and 95 km from Dimapur the commercial hub and gateway of Nagaland (GoN, 2020). Peren district is the home of the Zeliang and Kuki tribes and the languages spoken are the Zemi, Liangmai, Kuki, Rongmei and Nagamese along with English. The district is bounded by Dimapur in the north, Kohima in the east, Manipur in the south, and Assam in the west. The topography of the district is classified into three regions viz., Barail Ranges (hill sector); Jalukie Valley (plain sector); Intangki Forest (reserved forest). The land is fertile for agro-based production and the people of the district are mainly agrarian (80 percent) by occupation, paddy is the livelihood of the populace and Jalukie Valley is known as the Rice Bowl of Nagaland. Besides paddy, of late the people have taken up crops like pineapple, yam, beans, ginger, Banana, and other horticulture products, which supplement the crops. Recently farmers have taken up cash crops cultivation like rubber, tea, turmeric, medicinal plants, orchard, etc to enhance their income (Kehie *et al*. 2017) Fascinatingly, Peren is the only district where local people dominate and control commercial and business activities in towns and villages. The famous 'Mid-Night Market at Jalukie Town' where the commercial activities virtually begin from Mid-Night is an outlet for the agriculture and horticulture products of the farmers (GoN, 2021). The organic crops and vegetables which are grown in large areas and produced in large quantities are yet to be channelized for outside markets due to the lack of facilities like transport and cold storage coupled with financial hitches that are hampering and discouraging the poor marginal farmers for more productions in spite of the huge potentiality in the district (Solo & Kikhi, 2021).

2.5 Demographic Characteristics of Research Participants

The demographic information provides data regarding research participants and is necessary for the determination of whether the individuals in a particular study are a representative sample of the target population for generalization purposes. Concerned about the demographic profile of the farmers in a study of the factors affecting access to finance is important for generalizing the findings and making comparisons across replications. Table 2 presents the demographic profile of the sample respondents.

Table 2. Demographic profile of sample farmers (n=150)

Demographic Features	Category	No. of Respondents	Percentage (%)
Farmers Age	Below 30 years	65	43.33
	30 - 40 years	40	26.67
	40 - 50 years	25	16.67
	50 years and above	20	13.33
Gender	Male	80	53.33
	Female	70	46.67
Education	Nil	50	33.33
	Primary	40	26.67
	Secondary	35	23.33
	Graduate	25	16.67
Family Size	Less than 4 persons	45	30.00
	5 - 8 person	90	60.00
	9 and above	15	10.00

Source: *Self-calculation by the researchers*

The demographic presence of the respondents i.e., farmers indicates that out of the total number of 150 farmers, 43,33 percent fall below the age category of 30 years, 26.57 percent belong to 30-40 years, 16.67 percent come between 40-50 years, whereas only 13.33 percent comes under 50 years and above. It is found that 53.33 percent are male and 46.67 percent are female. Out of the total respondents, the majority of them i.e., 33 percent are illiterate, 26.67 percent of the respondents are primary level of education, 23.33 percent are secondary level and only 16.67 percent are having graduation. With respect to the size of the family, 30 percent of respondents are having less than 4 persons, 60 percent are having 5-8 persons in the family and 10 percent of them having 9 persons and above. The analysis of this demographic profile indicates a proper representation of respondents has been pinched from various clusters to draw appropriate research conclusions.

3. Analysis and Results

The study has identified factors that affect access to agricultural finance with the principles of component factor analysis**.** The exploratory factor analysis comprehensively suggests an experimental device for understanding the causal psychometric properties of an unidentified scale (Yong & Pearce, 2013). The stepwise construct of exploratory factor analysis was determined in detail and presented as follows.

3.1 Reliability Analysis

It is the key to initiate whether the scales included in the questionnaire are consistent or not. In order to determine data consistency, a data reliability test was conducted based on the

performance score of the items with Cronbach's alpha coefficient to verify the data integrity. Normally, Cronbach's alpha coefficient value of a scale should be 0.7 or higher (Pallant, 2010). The analysis results are presented in Table 3.

Table 3. Reliability of items

Cronbach's alpha value	Number of items
0.854	20

The Cronbach's alpha coefficient of the 20 items is more than 0.7 which confirms an acceptable and satisfactory range of the reliability scales, indicating the items that make up the scale are consistent and appropriately measure the underlying variables.

3.2 KMO and Bartlett's Tests

Kaiser-Meyer-Olkin (KMO) test is used to determine the sampling adequacy of data that are to be used for factor analysis. KMO values closer to 1.0 are considered ideal while values less than 0.5 are unacceptable (Tabachnick & Fidell, 2001). Bartlett's Test of Sphericity verifies for checking the factorability of data. Essentially, it checks to perceive if there is a certain redundancy between the variables that we can summarize with a few number of factors. It is essential to achieve a significant p-value (less than 0.05) for Bartlett's Test of Sphericity (Snedecor & Cochran, 1983). The results of KMO and Bartlett's Test may be had from table 4.

Table 4. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.837
Bartlett's Test of Sphericity	Approx. Chi-Square	10309.432
	Sig.	0.000

The value of KMO is found 0.837 and the significance probability level of Bartlett's test is p= 0.000 fell within the acceptable range determining that component analysis would be suitable for these variables.

3.3 Principal Component Analysis

Table 5 displayed the outcomes of the principal component analysis to determine the extraction factors without any restraints of cross-loadings and thus to provide the flexibility of addition/deletion/alterations scale of 20 items. The communalities determine the degree to which the variance between the variables was clarified by the extracted factors. The result of the analysis was suitable for carrying out further analysis since the value of the communalities is shown within the range.

Table 5. Communalities

Variables	Initial	Extraction
Absence of proper securities	1	0.550
Complicated procedures of loans	1	0.593
Credit used for consumption purposes	1	0.552
Difficulties of assistance in agriculture	1	0.616
Economic pauses in agriculture	1	0.450
Illiteracy of the farmers	1	0.841
Large family size of the farmers	1	0.749
Growing overdue discourages the farmers	1	0.750
High-interest rate on the loan	1	0.792
Improper utilization of loans	1	0.643
Lack of coordination between credit agencies	1	0.507
Lack of crop insurance	1	0.450
Low savings for the farmers	1	0.599
Pesticides and fertilizer inadequacy	1	0.557
Predominance of private agencies	1	0.601
Least repayment period	1	0.450
Risks associated with agriculture	1	0.811
The small size of the farm	1	0.640
Storage of infrastructure despair farmers	1	0.752
Diseases and damages due to pest	1	0.792

Extraction Method: Principal Component Analysis

Table 6 indicates the eigenvalue of the variables that precisely reflect the number of extracted factors whose sum must be equal to the number of major variables exposed to factor analysis.

Table 6. Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.932	24.660	24.666	4.932	24.660	30.219
2	3.257	16.285	40.945	3.257	16.285	40.945
3	2.923	14.660	55.605	2.923	14.660	55.605
4	1.954	9.770	65.375	1.954	9.770	65.375
5	0.908	4.540	69.915			
6	0.810	4.050	73.965			
7	0.802	4.010	77.975			
8	0.750	3.750	81.725			
9	0.612	3.060	84.785			
10	0.601	3.001	87.786			
11	0.555	2.774	90.560			
12	0.545	2.720	93.280			
13	0.435	2.175	95.455			
14	0.391	1.950	97.405			
15	0.379	1.191	98.596			
16	0.227	0.995	99.591			
17	0.197	0.305	99.896			
18	0.154	0.060	99.956			
19	0.076	0.020	99.976			
20	0.051	0.004	100.00			

Extraction Method: Principal Component Analysis

The eigenvalue also recapitulates the amount of variation in the main variables accounted for by major components. The number of factors with eigenvalues of more than 1.00 should be considered in the analysis (Kaiser, 1958). The analysis shows that there are altogether 20 variables, out of which, 4 variables whose eigenvalue is found more than 1, indicating that 4 factors' variables are comparative and summarise the variation of the major components. Considering the result of the analysis, it is found that extracted sums of squared loadings of the first factor accounts value is 24.660 with an eigenvalue of 4.932 which means that the first component summarised the variation of the major original variables, the second factor accounts for 16.285 consisting of 3.257 eigenvalue, the third factor accounts for 14.660 with 2.923 eigenvalues and the fourth factor accounts for 9.770 with 1.954 eigenvalue. The remaining components whose eigenvalue is found to be less than 1.000, the factorial component is not significant to the mean, meaning that the factorial component does not significantly summarise the variation of the original variable, and hence, these factors are left out of this study.

3.4 Component Matrix

The component matrix analysis was performed to identify the influencing factors involved in accessing agricultural finance and the results were presented in Table 7.

Table 7. Component matrix

Items/Factors	Component			
	1	2	3	4
Credit used for consumption purposes	0.552			
Illiteracy of the farmers	0.841			
Large family size of the farmers	0.749			
High-interest rate on the loan	0.792			
Lack of coordination between credit agencies	0.507			
Lack of crop insurance	0.450			
Predominance of private agencies	0.601			
Improper utilization of loans		0.643		
Complicated procedures of loans		0.593		
Difficulties of assistance in agriculture		0.616		
Absence of proper securities		0.550		
Growing overdue discourages the farmers		0.750		
Low savings for the farmers		0.599		
Least repayment period			0.450	
Economic pauses in agriculture			0.450	
Risks associated with agriculture			0.811	
The small size of the farm				0.640
Shortage of infrastructure despair farmers				0.752
Diseases and damages due to pest				0.792
Pesticides and fertilizer inadequacy				0.557
Extraction Method: Principal Component Analysis				

It is found that there are 4 factors altogether, out of which the first factors compress seven variables namely credit used for consumption purposes, illiteracy of the farmers, large family size of the farmer, high-interest rate on the loan, lack of coordination between credit agencies,

lack of crop insurance and predominance of private agencies. Based on these variables, this factor is suitably named as *Institutional factor*. The second group consists of 6 variables such as improper utilization of loans, complicated procedures of loans, difficulties of assistance in agriculture, absence of proper securities, growing overdue discourages the farmers and low savings for the farmers. Therefore, these variables can be considered the *procedural factor*. The third component is coined with three variables viz., repayment period, economic pauses in agriculture and risks associated with agriculture which can be named the *Infrastructure Support factor*. The final component that emerged from the analysis comprised of the variables ie., the small size of the farm, storage of infrastructure despair farmers, diseases and damages due to pest and pesticides, and fertilizer inadequacy and suitably can be named as *farm-specific factor*.

3.5 Identification of the Factors

Table 8 retrieved all the components are substantially loaded into 4 factors, whose eigenvalues are found to be more than 1 and the value of Cronbach's alpha for all factors is about 0.800 which is in the suitable range. These factors are suitably renamed as institutional, procedural, infrastructure support, and farm-specific factors.

Table 8. Factors Retrieved from the PCA with their Eigen Values, Variance explained and Cronbach's Alpha.

Sl. No.	Factors	Eigen Values	Variance	Reliability (Cronbach's Alpha)
1	Institutional Factor	4.932	24.660	0.817
2	Procedural Factor	3.257	16.285	0.842
3	Infrastructure Support Factor	2.923	14.660	0.803
4	Farm Specific Factor	1.954	9.770	0.832

Extracted from Principal Component Analysis

The factors identified above in each of the components are so related to each other that the factors which fall under the institutional category are considered to be more important than the 2nd component (procedural factor) which is again considered to be more important than the 3rd component (infrastructure support factor) and the final component (farm-specific factor). Therefore, it may be observed from the analysis of farmers' opinions regarding access to finance based on their experience revealed that the factors under the institutional category followed by procedural factor, supportive factor to be given due importance which may lead to the farmers for effective access and utilization of finance for agricultural activities.

4. Research Implications

There is a need to rethink the role of interventions in meeting the financial requirements of the farmers with a vision of self-confidence and sustained agriculture growth. An efficient and operational financing scheme can be developed which will assist to reduce farmers' constraints level arising from poor socio-economic shortages. However, the following implication of this research may be proposed on the basis of the analysis.

1. There is an immense need to accent more effort and attention on institutional factors for access to finance the farmers. The period between the loan application request and actual approval should be reduced by simplifying the loan sanctioning policy. It is very necessary to achieve the objectives of microfinance because if the loan is approved a delayed basis after the lapse of farming, then it will be diverted to some other personal consumption purposes. There must be a proper flow of finance according to farmers' requirements. The reason being if less amount is sanctioned than the required demand, the farmers would be unable to perform their farm activities for better farm production. The effective coordination between credit agencies and farmers desires to be strengthened. A major hindrance of high-interest rates may be reduced to a possible extent to attract more farmers for credit facilities. Due care needs to be given to crop insurance to build the confidence of farmers so that the farmers can work and access credit without any hesitation of crop failure due to monsoon.
2. To tackle the procedural factor of access to agricultural finance, the farmers are required to be account holders to access finance which will eventually encourage the farmers for building saving habits and will enable them to access more financial services in the future. Specific measures may be employed to motivate the farmers e.g., award appreciation certificates, present prizes, payment of fair profit margin on their saving deposits, organizing show role-play or cooperative day to elaborate the importance of saving with financial institutions rather than doing at home. The procedural simplification may attract the farmers to avail credit facilities and proper utilization of loan amount sanctioned be ensured. The mounting overdue discourages the farmers to repay the loan amount, hence, farmers should be provided with smaller loan amounts at first as it leads to good repayment.
3. The institutional support factor to be taken care of so that the farmer gets access to finance. The liberal repayment period based on the economic status of the small farmers needs to be injected so that the farmers enjoy the full benefit of credit facilities. In this respect, farmers shall feel that the institutional support system is entirely in favour of them and there are no risks associated with the agricultural occupation.
4. The results of the empirical analysis that farm-specific factors also deter accessing agricultural finance by the farmers. In this respect, farmers should be supported to increase their ownership of land size so that they can plant more crops and increase their sales. This will ultimately enable them to improve their repayment rate. The integrated policy should be implemented through a contractual partnership between financial institutions, farmer-based originations, and input suppliers of seed and fertilizers.

5. Direction for Future Research

The selected farmers of the Peren district of Nagaland have been considered to identify the perception of the factors affecting access to agricultural finance. Comparative studies may be undertaken considering farmers of different districts to gain further insights into the subject. The perceptions of credit delivery institutions may also be studied to develop a definite empirical validation on the subject.

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