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Financial Inclusion of Rural Households in Andhra Pradesh, India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Socio-economic development of rural households is directly linked with the extent of access and usage of financial services, since it equips the households with credit in times of emergency and also useful in upliftment of their status by investing in the productive purposes. Despite possessing bank account by all rural households under study, access and usage of the financial services was found to be very low. The present study was conducted during the year 2019-20 with an attempt to analyse the determinants of usage of banking services and constraints that would be responsible in availing the financial services by rural households in Andhra Pradesh and to suggest measures to improve the financial inclusion. A total of 410 rural households in Andhra Pradesh were selected using multistage sampling procedure. The data on the determinants of usage of banking services were tabulated, coded and analysed through logistic regression using SPSS version 20.0 software and responses collected on constraints of financial inclusion were analysed using Garrett Ranking

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Technique. Explanatory variables like occupation, education status, income level of the household and land holding were statistically significant and a one unit increase in these variables favours the odds ratio of a household usage of banking services. Among the constraints identified, financial illiteracy emerged as the top most constraint of accessing the financial services followed by the difficulty in getting a loan/emergency credit from the financial institutions. So, to improve the accessibility and usage of formal financial services, there is need to simplify the procedures of financial institutions and also the security norms have to be relaxed for the rural households. Financial literacy has to be increased by conducting periodical training programmes by the concerned banks in the area to strengthen the accessibility to financial services.

Keywords: Financial inclusion; usage of banking services; rural households; garrett ranking; financial illiteracy.

1. INTRODUCTION

The access to financial institutions and usage of the banking services is necessary for the socio-economic upliftment of rural households, and financial inclusion is one such way. Financial inclusion refers to delivery of financial services, at affordable cost, to the lower segments of society [1]. Well-developed financial system includes three aspects: access to financial services, affordability of such services and the utilization of such services [2]. In this direction the Government of India has introduced various schemes and programmes and taken several measures to bring the rural households in the folds of financial access.

Though the technological intervention has brought drastic change in the banking technology supplemented by ATMs, Debit / Credit cards, online money transactions, internet banking etc., the accessibility and usage of these services remained as the major problem. In rural areas of India, the share of debt from the institutional and non-institutional credit agencies was 66.1 and 33.8 per cent respectively, which was 35.8 per cent and 64.2 per cent respectively in Andhra Pradesh state showing the lesser share of institutional credit in total credit. The huge dependency of households on informal credit sources for their financial needs reveals the difficulties faced by the households in accessing the financial services from institutional sources. There can be many reasons for inefficient spread of financial services like lack of awareness, distance to bank, high interest rates, lack of assets, age dependency, illiteracy and low income/savings etc. [3]. Hence the research paper entitled “Financial inclusion of Rural Households in Andhra Pradesh, India” is aimed at analyzing the determinants of usage of banking services, identifying the constraints of financial inclusion among rural households and suggesting suitable policy measures.

2. METHODOLOGY

2.1 Sample Selection

Andhra Pradesh state was purposively selected for the present study. A multistage sampling technique was adopted to select the rural household respondents. Based on the CRISIL (Credit Rating Information Services of India Limited) Inclusix 2018 results, two districts each with highest and lowest CRISIL Inclusix score from each of the three regions of Andhra Pradesh viz., Srikakulam and Visakhapatnam from North Coastal region, Krishna and Nellore from South Coastal region and Kadapa and Kurnool from the Rayalaseema region were selected. Two mandals in each selected district based on the maximum and minimum number of bank branches respectively, with highest concentration of rural population were selected. Top two villages with highest rural population and at least one bank branch were selected from each of the selected twelve mandals for selection of the final respondents. The total account holders of the banks in all the 24 selected villages were considered as the total population for final selection of the respondents. Sample size was derived using Cochran’s formula. Respondents were selected by simple random sampling, in proportion to the population size, from each of the selected village. Thus a total of 410 rural households were selected for collecting the data relevant to the objectives of the study viz., determinants of financial inclusion comprising of socio-economic characteristics of rural households, constraints and suggestions of financial inclusion as opined by the sample respondents.

2.2 Analytical Tools

2.2.1 Logistic regression analysis

The logistic regression model was used to determine the factors that influence usage of banking services by rural households. In this case, dependent variable (Y_i) was measured in terms of the usage of normal banking operations like saving, depositing and withdrawing of money at least once in a month. The logit model was specified as

$$P(Y_i) = 1/[1+\exp-(\alpha - \sum \beta_i X_i)]$$

In order to linearize the right hand size, a logit transformation was applied by taking the logarithm of both sides:

$$\text{Logit } P(Y_i) = \alpha + \sum \beta_i X_i$$

Where,
Y_i=1, if households use normal banking operations at least once in a month
Y_i=0, if households do not use normal banking operations at least once in a month
α = constant term
X_i=independent variables (socioeconomic factors)
β_i= logistic coefficients for the i^{th} independent variables (log odds ratios)
e = error term
For this study, above equation was expressed implicitly as

$Y_i = a + b_i X_i + \ldots\ldots + b_n X_n + u_i$

Y_i = access to credit (1 if yes, 0 if no)
$X_i \ldots\ldots X_n$ independent variables.
b_1, b_2 . . . b_n were parameters corresponding to estimated variables coefficients.
u_i is the error term and consisted of unobservable random variables.

The explanatory variables specified in the model were occupation (dummy; 1= farming, 2 = self-employed, 3= employed (Govt. & private) and 4= unemployed), education qualification (dummy; 0= illiterate 1=below metric 2 = above metric), household income (dummy; 1= < ₹4500 (Reference), 2 = ₹4501- ₹9000 and 3= Above ₹ 9000), land holding (acres), MGNREGA participation (dummy; 1= yes and 0 = no) and age of the respondent.

2.3 Garrett Ranking

Garrett ranking technique was used to interpret the results pertaining to constraints of financial inclusion among rural households. In Garrett's ranking technique, the respondents were enquired to rank the factors or problems and the ranks were converted into per cent position by using the following formula.

$$\text{Per cent position} = 100*(R_{ij} - 0.5)/N_j$$

Where
R_{ij} = Rank given to the i^{th} probelm by the j^{th} sample respondents
N_j = Total rank given by the j^{th} sample respondents

With the help of Garrett's Table Garret and Woodworth [4], the percentage position estimated was converted into scores. Then for each factor, the scores of each individual were added and then total value of scores and mean values of score was calculated. The factors having highest mean value is considered to be the most important factor.

3. RESULTS AND DISCUSSION

3.1 Socio - Economic Profile of Rural Households

The results in Table 1 indicate that 26.60 per cent of the respondents were under the age group of above 35 years, out of total rural households 34.60 per cent of respondents were under the age group of 36-44 years, 30 per cent were between age group of 51-65 years and only 8.80 per cent of the respondents were presented in the age group of 60 years and above. This implied that majority of respondents were found between the age group of 36-44 years. The implications of the study found that most of the respondents represent their active age group. It is also evident from the analysis that 35.40 per cent of the respondents were unemployed and 30 per cent of the respondents were self-employed followed by 29.30 per cents of the respondents having farming as their major occupation. There were only 5.40 per cent employed respondents in the study group.

The study further depicts that out of the total 410 respondents, seventy per cent of respondents were without formal education, 15.60 per cent obtained metric level education, 14.40 per cent of the respondents attained above metric level qualification, that there were low literacy rate among the respondents.

About 22.20 per cent of the respondents were having annual income < ₹4500, 65.90 per cent of the respondents were having their annual income between ₹4501 to ₹9000 and only 12 per cent of the respondents were earning annual income of above ₹9000. The respondents who were using banking services and participating in the MGNREGA works were 59.50 per cent and 62.68 per cent respectively.

3.2 Determinants of Usage of Banking Services

It can be interpreted from Table 2 that all the independent variables were contributing significantly to the dependent variable when combined together, as the significant chi-square values were less than 0.05. Hosmer and Lemeshow Test was used to test the goodness of fit of the model presented in Table 3. The p-value of .093 (>0.05) indicates that the theoretical model fits the data. It is also observed from Table 4, that 86.1% respondents were correctly classified pertaining to the dependent variable in terms of usage of regular banking services.

Table 5 provides the results of logistic analysis. The value of Nagelkerke R Square (0.652) depicts that the model is a good fit explaining about 65.2% of the variability in the dependent variable usage of banking services. The pseudo R Square values suggested that the independent variable could create an impact of 48.3% to 65.2% on the dependent variable.

Table 1. Frequency analysis of socio-economic profile of rural households (n = 410)

Socio-economic parameter	Category	Frequency	Percentage
Age of the Household Head	upto 35	109	26.60
	36-44	142	34.60
	45-59	123	30.00
	60 and above	36	08.80
Occupation	1: Farming	120	29.30
	2: Self employed	123	30.00
	3: Employed	22	05.40
	4: Unemployed (Reference)	145	35.40
Education status	1: illiterate (Reference)	287	70.00
	2: Upto metric	64	15.60
	3: Above metric	59	14.40
Household Income	1: < ₹4500 (Reference)	91	22.20
	2: ₹4501-₹9000	270	65.90
	3: Above ₹9000	49	12.00
MGNREGA participation	0: No	153	37.31
	1: Yes	257	62.68
Usage of banking services	0 : No	166	40.50
	1: Yes	244	59.50

Source: Field Survey 2019-20

Table 2. Model significance

Omnibus Tests of Model Coefficients				
		Chi-square	df	Sig.
Step 1	Step	270.202	10	.000
	Block	270.202	10	.000
	Model	270.202	10	.000

Source: Primary data - SPSS Output

Table 3. Hosmer and lemeshow test

Step	Chi-square	df	Sig.
1	13.584	8	.093

Source: Primary data - SPSS Output

Table 4. Classification on usage of regular banking services

Observed			Predicted		
			Usage		Percentage Correct
			No	Yes	
Step 1	Usage	No	129	37	77.7
		Yes	20	224	91.8
	Overall Percentage				86.1

a. The cut value is .500

Source: Primary data -SPSS Output

Table 5. Determinants of usage of regular banking services (n = 410)

S.No.	Variable	β	S.E.	Wald	Df	Sig.	Exp(β)	95% C.I. for EXP(β)	
								Lower	Upper
1.	Age	.010	.017	.378	1	.539(NS)	1.010	.978	1.044
2.	Land holding	.836	.356	5.515	1	.019**	2.306	1.148	4.633
3.	MGNREGA	-.210	.350	.361	1	.548(NS)	.810	.408	1.610
4.	Occupation								
	Unemployed/labour			32.863	3	.000***			
	Farmer	2.051	.669	9.413	1	.002***	7.777	2.098	28.831
	Self employed	2.086	.378	30.448	1	.000***	8.055	3.839	16.901
	Employed	1.734	.985	3.100	1	.078*	5.666	.822	39.071
5.	Education status								
	Illiterate			15.882	2	.000***			
	Upto metric	1.439	.459	9.809	1	.002***	4.216	1.713	10.372
	Above metric	2.308	.817	7.971	1	.005***	10.052	2.025	49.894
6.	Income level of household								
	< 4500			13.607	2	.001***			
	4501-9000	1.607	.442	13.241	1	.000***	4.990	2.099	11.860
	>9000	1.770	.787	5.055	1	.025**	5.870	1.255	27.461
	Constant	-3.347	.936	12.784	1	.000	.035		

-2 Likelihood ratio: 283.24
Cox and Snell R square value: .0.483
Nagelkerke R square value: 0.652
NS - Not Significant, *** 1 % LOS, ** 5 % LOS, *10% LOS

Source: Primary data -SPSS Output

Table 6. Ranking given by respondents to different constraints

S.No.	Constraint	Garrett's mean score	Rank
1	Bank is far away from the home	40.31	8
2	No regular income	61.87	3
3	Minimum balance is too high	47.21	7
4	Non availability of ATMs / other financial services	48.07	6
5	Financial illiteracy	66.82	1
6	No trust in the banking system	34.40	9
7	Difficult to get a loan/emergency credit	63.82	2
8	Prices of the financial service products are not affordable	48.59	5
9	Only branch in the area, heavy crowd, waste of time and money	55.68	4
10	Poor response of the bank employees	33.23	10

Source: Authors Calculation

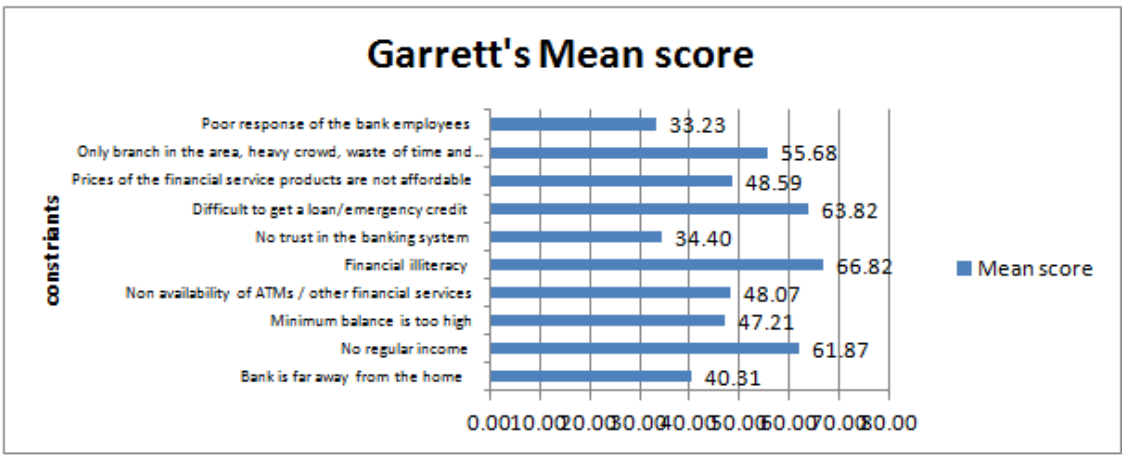

Fig. 1. Mean score of the constraints of financial inclusion of rural households

The income of household had a positive impact on odd ratio in favour of usage of regular banking services at 1 per cent level of significance. The income level of the households motivates them for savings, investments, depositing, withdrawing etc., on regular basis. As observed from the odds ratio, households with ₹4501-₹9000 and above ₹9000 are 4.990 and 5.870 times more likely to usage of banking services, respectively as compared to the households who belongs to income less than ₹4500. This indicates that the households in the low income group enjoy less preference in banking habits. The results of this study strengthen the results of earlier studies done by Poonam and Chaudary (2019), who reported that the income of households had a significant and positive effect on the odds ratio in favour of savings in banks.

The education status of the household head was also found to be influencing the usage of banking services. The possibility or odds to usage of regular banking services increased by a factor of 4.216 and 10.052 in the category of households having educational qualification upto metric and above metric respectively, when compared to the reference category illiterate. People with higher level of education in general could be more aware of the various benefits that come from using the banking services. Moreover, people with good education were expected to be well-versed with various benefits that come from opening of an account, usage of services and maintaining account with zero minimum balance. Thus, education is a key enabler as it provides confidence to the rural households and helps them keep abreast with the various benefits that financial inclusion gets them. Arathi [6] reported the similar results indicating that literacy was the important factor that influenced household's usage of regular banking operations.

The occupation of household head had positive impact on usage of regular banking services at 1

per cent level of significance. The possibility or odds to usage of banking services increases with change in the occupation status by a factor of 7.777 in case of farmers, 8.055 in case of self-employed households and 5.666 in case of employed category. The result is in agreement with Bajrang and Sharma [7], where occupation significantly influenced the households' decision of opening bank account and using of the services.

Land holding of household had significant positive impact on usage of banking services at 5% LOS. The land ownership makes the households access to credit easier there by the associated banking services will be utilized by them regularly.

One of the significant observations from the study was that the participation of respondents in the employment guarantee programmes like MGNREGA was not showing significant effect on the usage of banking services. The possible reason for the dormant status of the accounts without any usage of the services was that, most of respondents who were involved in the MGREGA- like schemes could not found work throughout the year. They had to face uncertainties and look for other sources of income, whose payment may be informal i.e, either direct cash or kind payments.

3.3 Constraints of Financial Inclusion

As observed from Table 6 and Fig. 1, the constraints selected for the study include: Bank is far away, no regular income, minimum balance is too high, non-availability of ATMs/ other financial services, financial illiteracy, no trust in the banking system, difficult to get a loan/emergency credit, prices of the financial service products are not affordable, only branch in the area, heavy crowd, waste of time and money, poor response of the bank employees. The ranks along with the mean score of the constraints of financial inclusion are depicted in Table 6. It is observed that most of the respondents reported financial illiteracy as the major constraint to avail the financial services from the formal sources, which was ranked first by the rural households with mean score of 66.82. Unavailability of emergency credit from the financial institutions (63.82) and no regular income (61.87) were ranked II and III respectively. Illiteracy is the major hindrance to avail the technology based financial services by the rural households. This finding is in conformity with Manreet and Arjinder [8] who reported that illiteracy was one of the hindrance factors in availing credit and Ray [9] who reported that due to lack of literacy and financial awareness, the utilization of accounts was limited only to deposits and withdrawls. The second most important constraint of financial inclusion in the study area was unavailability of emergency credit from the financial institutions. The AIDIS (All India Debt & Investment survey) 2019 also reported that the rural households share of debt from informal credit sources (64.2%) was highest than that of formal credit sources (35.8%), revealing the rural households dependency on informal credit sources for their financial needs was higher than that of formal credit sources. The reasons include easy access, timeliness, personal relations, easy repayment etc. In contrast, the formal sources provide credit only when the households fulfil the security criteria which the rural households find difficult since the asset holding of the rural household was low with no guaranteed income sources especially for the unemployed labourers.

The third most important constraint for financial inclusion in the study area was irregular income (61.87%). Most of the respondents depend on the informal works to earn their livelihood which are uncertain, hence they might not get sufficient income all the time. This finding was in conformity with Ray [9] who reported that lack of sufficient and regular income was found to be the main reason for involuntary financial exclusion. The result was in conformity with Paramasivan and Ganeshkumar [10] also, who reported that lack of sufficient income was an obstacle which excluded the people from accessing bank account, credit, saving and other financial services.

The presence of only one bank branch in the area leading to heavy crowd, waste of time and money (55.68%) was reported as the fourth constraint by the rural households. The government with the intention of providing the banking services established the bank branches in the rural areas in mission mode but the infrastructure and availability of banking staff was very poor in some of the study areas. Supported to that, the people from unbanked areas approach these bank branches making it inconvenient for the respondents to get the services on time. It was also observed that households who took a bank account in a particular branch for availing the services still visit to that branch though new bank branch was

established in their locality, because the account could not be transferred from one bank to other bank because of the fear that the institutional agencies loose their business.

The fifth ranked constraint was unaffordable financial service products with 48.59 per cent. Not all the respondents were affordable to avail the financial services. The earnings of the households are meagre such that it may be difficult for them even to pay interest on the credit and to maintain minimum balance amount. Unless the account was a PMJDY account, the customer had to bear charges for every financial service starting from opening account, availing debit card and non-maintenance of minimum balance, etc. Revathi and Thilagavathi [11] also found that the high cost of credit was one of the major constraints to the access of agriculture investment credit [12,13].

Non-availability of ATMs was ranked as the sixth constraint with 48.07% score by the rural households. Out of the twenty four selected villages, six villages were not having any ATM facility. Some of the villages with ATM were not having enough cash to dispense and at often times they were not functional.

The other constraints reported were, minimum balance is too high, distance of the bank, no trust in the banking system and response of the bank employees is not good with mean scores of 47.21, 40.31, 34.40 and 33.23 respectively.

4. SUMMARY AND CONCLUSIONS

The analysis on socio-economic profile of the respondents highlighted that, most of them belonged to the age group of 36-44 years who were considered to be most active group. It was concluded that most of the respondents were unemployed and seventy per cent of the respondents were not having any educational background. There were about 65.90 per cent of the respondents who were having their annual income between ₹4501 to ₹9000. The logistic regression analysis revealed that the explanatory variables like occupation, education status, income level of the household and landholding were the major determinants of usage of banking services. A unit increase in these variables favours positively the odds ratio of a household usage of banking services.

Financial illiteracy in availing the technology based financial services was found to be the major constraint of financial inclusion, followed by difficulty in getting emergency credit from the financial institutions, irregularity in the income, etc. These constraints lead the respondents to approach the non-institutional sources as these sources included lesser formalities, ease of repayments and benefit of borrowing small sums. No regular income was also reported as a constraint of financial inclusion by the rural households. Thus, there is need to improve the income and educational levels of target group to have better access and usage of financial services.

5. POLICY IMPLICATIONS

- The financial institutions and the government should be more focused on increase in usage of banking services rather than only on opening of new bank accounts.
- The banks can use the services of the village secretariat system established in states like Andhra Pradesh, for creating awareness of the inclusive financial system.
- Financial literacy programmes should be organised by the gross root level agencies like NGOs, Customer service points etc.
- The banks should consider the borrower credentials, by relaxing the security norms to the extent possible, in sanctioning the emergency credit.
- Government should play instrumental role in providing the employment opportunities to the rural poor through non-farm activities.
- The number of Banking staff in proportion to the population served may be increased, besides improving the banking infrastructure. The branches with high density should make use of the Business correspondents and Customer service points in extending the financial services to the rural households.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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