An Investigation Into Factors Affecting Access to Financial Services in Farmers' Suicide Prone Bundelkhand Region of India

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Abstract

Finance is the basis of all economic activities. The importance of access to finance by one and all on an equitable basis for sustainable development of a nation has been well documented in the literature. However, mere opening of a savings account cannot serve the purpose of complete financial inclusion unless the financial services are used on a regular basis by the people. In this context, this paper made an attempt to study factors which are associated with financial inclusion by way of two parameters - using a bank account for deposit/withdrawal and using credit from institutional sources in rural India. For this purpose, data were collected from Bundelkhand region of India where farmer suicides is one of the most burning issues. The results showed that gender, age, and size of landholding were statistically significant in predicting the probability of an individual being financially included or not.

Key words : **access to financial services, financial inclusion, banking institutions**

JEL Classification : C43, G21, G38

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The growth of an economy depends on how efficiently the flow of funds takes place from saver to borrower with the help of a sound financial system (McKinnon, 1973). Therefore, banking institutions in an economy play a vital role in channelizing surplus funds from savers to borrowers. Their role becomes even more important in case of developing economies where sustainability is as important as growth. The Indian economy is one such bank-based economy where banking institutions are the major players in financial markets. The Indian economy has witnessed tremendous changes in the past years, especially after its independence from the British Empire in the year 1947. Since then, the government has been trying hard to make finance accessible to one and all on an equitable basis and has initiated a number of reforms to accomplish the goal of inclusive growth. Although a majority of reforms have been initiated in India to promote increased access to financial services and to make the system inclusive (Reddy, 2016), however, still more than 40% of the Indian population is financially excluded (Sharma, 2016).

To promote increased access to financial services by one and all, the nationalization of banks was initiated in India. The State Bank of India was a major private sector bank and was nationalized in the year 1955 to deliver financial services to marginalized sections of the society. Furthermore, the subsidiaries of SBI were nationalized

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Table 1. Major Reforms Undertaken to Promote Increased Access to Financial Services

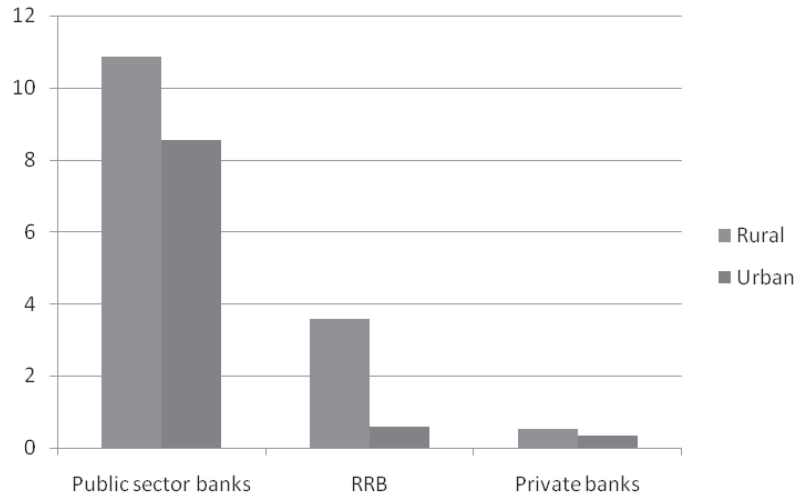
Year	Major reforms
1955	Nationalization of SBI.
1959	Nationalization of SBI Associates.
1967	Social control over banks.
1969	Lead bank scheme.
1975	Establishment of Regional Rural Banks (RRB).
1977	Rule of 1:4 bank branches imposed.
1982	Establishment of NABARD.
1989	Service area approach.
1991	Major economic reforms initiated based on Narsimham Committee.
1998	Kisan Credit Card scheme initiated.
2005	Business correspondents model was promoted.
2009	UIDAI scheme was launched.
2007	Financial Literacy and Counseling Centers (FLCC) scheme was set up.
2011	Swabhimaan Campaign.
2014	Pradhan-Mantri Jan-Dhan Yojana (PMJDY) was initiated.

later in 1959. To promote access to credit by rural households, which were hitherto deprived of financial services, the RRBs were established in India during the year 1975 to serve the needs of the rural communities (Verma & Garg, 2016). Since then, RRBs are serving rural India and as of March 2015, there were 56 RRBs present in India.

Given the huge transaction cost and inherent risk in lending to poor communities, most of the public sector banks confined their operations to urban and metropolitan areas, and the rural areas were neglected at large till the year 1977. It was in this year that the rule of 1:4 was implemented in India where it was made mandatory to open four branches in unbanked rural areas before opening any branch in a banked area. This effort resulted in a tremendous growth in the rural sector bank branches. NABARD was established during the year 1982 to promote growth and development of the agriculture and rural sector in India. It was also given the task of promoting financial inclusion in India. However, a reversal in growth rate of rural bank branches was observed during the 1990s when the major economic reforms in India were initiated. During this time, the social control over banks was withdrawn and private and foreign banks were given permission to enter the banking sector in India to make the banking sector more competitive. Later, in early 2000s, it was realized that the rural sector in India was hugely neglected and a large-scale financial exclusion prevailed in the country (Sathiyan & Panda, 2016). To cover the hitherto deprived groups under the formal financial network, financial inclusion as a major policy effort was initiated during the year 2005-06. The Table 1 presents the major steps initiated in India to improve access to financial services in India.

It is widely believed that the concept of financial inclusion was formalized by K. C. Chakraborthy in the year 2005. Further, in the year 2006, banks were allowed to take the help of micro finance institutions to promote financial inclusion in India. The PMJDY scheme of 2014 can be seen as the major effort to promote financial inclusion in India. The scheme was launched on August 28, 2014 by the Prime Minister of India to promote financial inclusion throughout the country. The scheme aims at increased access to basic services like savings, remittance, credit, insurance, and pension in an affordable manner. The Figure 1 presents the bank group - wise share of scheduled commercial banks in total deposit accounts opened under the scheme. As on September 14,

Figure 1. Bank Group-Wise Share in Deposit Accounts Under PMJDY (in crores)



Source: Adapted from Pradhan Mantri Jan Dhan Yojana (2018)

2016, a total of 24.44 crore accounts were opened under PMJDY throughout the country with 14.99 crores in rural India and 9.45 crore accounts in urban India. It can be observed that the number of accounts opened was higher for rural India as compared to urban India. Till this date, the total number of accounts opened by public sector banks was 19.4 crore accounts with 10.87 crore accounts in rural areas and 8.53 crore accounts in urban areas. The share of private sector banks was found to be least among all bank groups. Rupay debit card scheme was also launched by the Government of India in August 2014 under PMJDY (Tripathi, Yadav, & Shastri, 2016). The objective of the scheme was to provide a basic banking account with overdraft facility.

The scheme also covered objectives like promoting financial literacy, creation of credit guarantee fund, micro insurance, and pension schemes. As on September 14, 2016, a total of 19.05 crore Rupay cards were issued throughout the country, with the highest number of cards being issued by public sector banks, that is, 15.45 crore cards. Further, to promote financial literacy, financial literacy centers have been opened throughout the country. They are the units which promote financial education at the ground level. The target groups of such FLCCs are farmers, SHGs, micro and small enterprises, senior citizens, and children among others.

Agriculture is an important economic sector in India. It is more than an occupation for rural India and majority of the rural India depends on agriculture for their livelihood. Out of about 156 million rural households in India, about 90.2 million are agricultural households. Among all landholding categories, marginal and small farmers occupy the highest proportion of farmer households. Credit as an important indirect input is required by them to carry on the farm production process. Now-a-days, the agricultural output is demand-driven, therefore, the farming sector requires use of modern technology and inputs to carry on the production process. Use of modern technology in turn demands more finance as an input. Hence, the need for finance becomes more important for farming households. Agriculture in India has gone through a tremendous change with changes in technology and cropping pattern from subsistence cropping to cash cropping. Credit in the short run helps farmers to acquire required inputs needed in the production process and in the long-run, aids them for investment purposes. Until the late 1990s, agriculture credit delivery was multi-product and multi-agency approach based. There was rigidity in the scale of financing agricultural operations with no provision for maintenance costs. Further, inadequacy of loans and delay in credit disbursements was also present. Recognizing the limitations of such approach, the Kisan Credit Card Scheme was launched in the year 1998-99 by NABARD to provide farmers with an integrated credit

approach with separate provisions for production needs, assets maintenance, and production needs. The scheme intended to meet short-term credit needs of farmers through a single window for multiple purposes through a uniform credit delivery mechanism. With the introduction of this scheme, credit was easily accessible to farmers from flexible institutional sources, which were less time consuming and cost-effective.

In this context, this study has made an attempt to study access to financial services in rural India by farming households. Here, we employ micro-level primary data on farming households collected by way of a detailed questionnaire from farming households. Furthermore, we employ a binary logistic regression model to predict the probability of being financially included where financial inclusion has been studied in two forms: (a) individual using a bank account for savings/borrowing; and (b) borrowers using credit from institutional sources of credit. Therefore, we employ two models to predict the probability of a household being financially included /excluded on these two parameters.

Literature Review

Several studies have been conducted by researchers in India and abroad as well to identify the factors which are associated with access to financial services at the micro - level. Leyshon and Thrift (1995) asserted that while lending to vulnerable groups of the society, the risk assessment of borrowers is done on the basis of credit worthiness, which is the likelihood of how much amount might be repaid back. The risk of lending stands higher in case of poor and disadvantaged groups of society, and therefore, it is the structural setup of the institutional network which is by nature discriminant against lower-income groups.

Kempson (2006) asserted that although the levels of exclusion from the formal sector were different, but the most common group of excluded included people from low income communities, ethnic minority communities, people living in rural areas, and those having a history of bad debt. Anderloni, Bayot, Bledowski, Iwanicz - Drozdowska, and Kempson (2008) found that financial exclusion is a difficulty in accessing appropriate financial services and products. The study defined financial inclusion as unconstrained access to transaction banking, savings, credit, and insurance. The study emphasized both demand and supply side constraints to financial inclusion, where demand side factors related to financial capability of customer and supply side factors constituted features of the product/service being sold. The study focused on three levels of exclusion - the first category included people who were totally unbanked; the second level included marginally banked with deposit account and no electronic payment facility ; whereas, the third level included fully banked. The World Bank (2008) defined financial inclusion as the lack of price or non-price barriers and differentiated between access and usage of financial services, with the former representing supply-side aspects of financial inclusion only ; whereas, the latter covered both demand and supply-side factors. The study categorized exclusion as voluntary and non-voluntary. While voluntary exclusion was related to no need, cultural reasons; involuntary exclusion included insufficient income, discrimination, contractual framework, price/product features.

Chibba (2009) argued that financial inclusion can be used as an effective tool to counter poverty and achieve millennium development goals (MDGs). Shehu (2012) argued that inclusive finance does not necessarily mean that everyone who is eligible should use the financial services, but should be able to use them whenever they wish to use them. Goodwin, Adelman, Middleton, and Ashworth (2000) studied financial inclusion in Britain and viewed financial exclusion as a multi-dimensional construct by considering a household as being financially excluded if it had not paid due bills on time, had been disconnected, borrowed money from non-institutional sector, did not have a bank account, had savings less than ten pounds, and no home insurance. The results of the study showed that respondents who were aged between 16 to 24 years of age, households with ethnic respondents, households with no workers, lone parents, households in receipt of job seeker's allowance, number of households

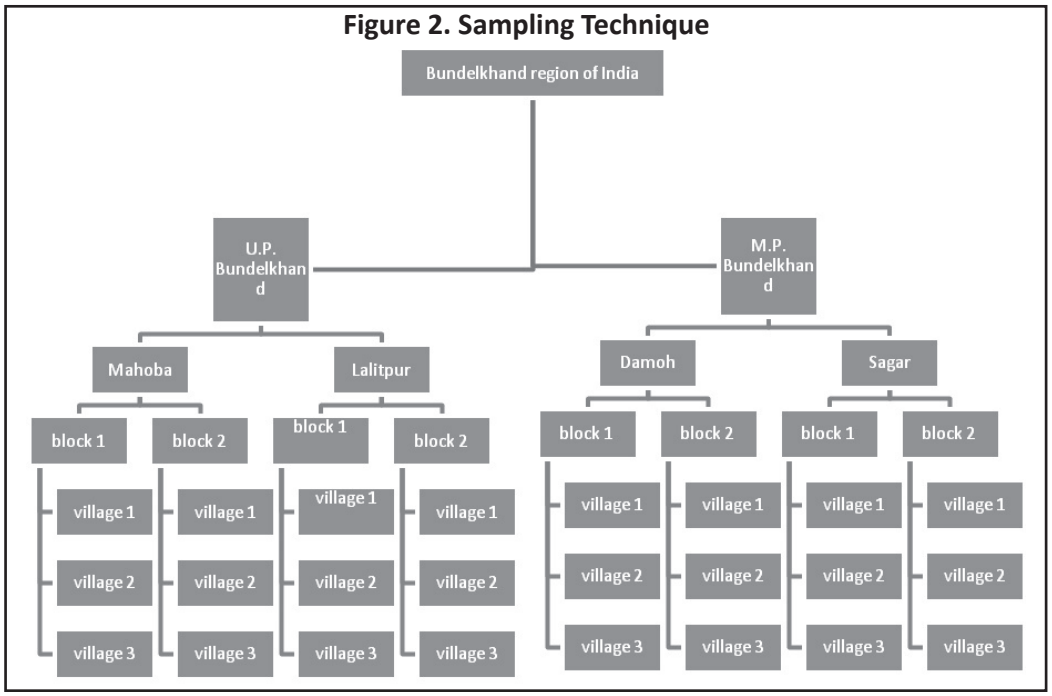
working, living in sparsely populated areas, and households with rented accommodation were more likely to be financially excluded.

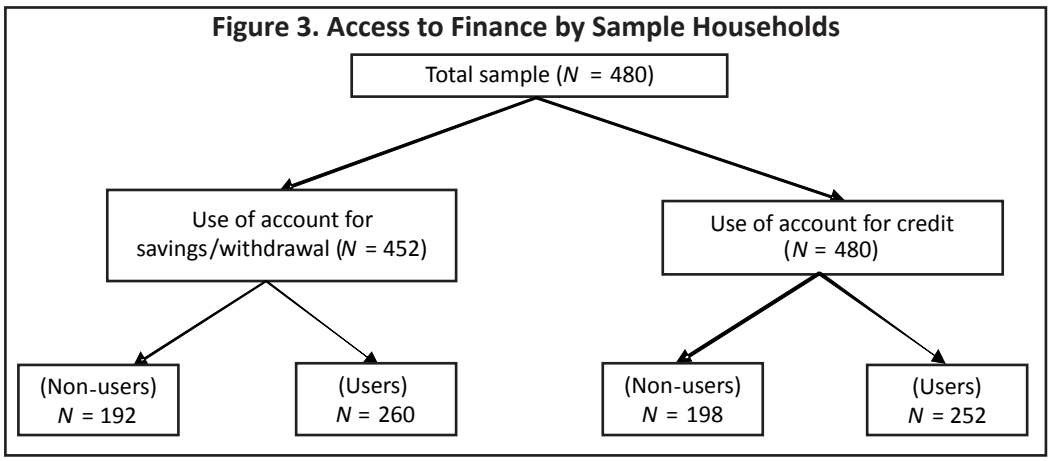
Bhanot, Bapat, and Bera (2012) studied financial inclusion in North - Eastern India using household-level data with a sample size of 411 households collected from the state of Assam and Meghalaya. The study found that out of the total, 63.5% of the respondents were financially included, where financially included meant possession of a bank or post office account. Furthermore, it was found that out of total, only 5.94% of the sample households availed credit facilities of the formal financial system. Chaudhuri and Gupta (1996) empirically established that the policy of providing cheap credit in the formal sector and agriculture prices may raise interest rates in the informal market. Dev (2006) asserted that since credit to farmer households is one of the most important ingredients of financial inclusion, therefore, financial inclusion could be effective if the productivity of small and marginal farmers is increased by improving access to credit.

Verma (2011) studied the situation of agrarian distress in Bundelkhand region of India and found that similar to Maharashtra, Andhra Pradesh, Karnataka, and Kerala, the situation of farmers was worse in the Bundelkhand region and there was a spate of suicides in the region. The study emphasized the presence of several factors responsible for farmer suicides in the region like - lack of collateral, traditional and outdated techniques of farming, and administrative neglect of the region. Hoda and Terway (2015) analyzed the performance of current inclusion policies in India with special reference to priority sector lending. The study found that although Kisan Credit Cards have increased credit outreach in rural India, the rise in lending for short-term raised concern for diversification of loans for non-productive purposes.

Allen, Demirgüç - Kunt, Klapper, and Peria (2012) found that those who belonged to marginally backward groups of the society, less educated, unemployed, belonged to rural communities were more likely to report cost as a barrier to account ownership. Ramji (2009) reported a significantly strong association between being a beneficiary of NREGP (National Rural Employment Guarantee Programme) scheme and holding a new bank account. Siddik, Sun, and Kabiraj (2015) studied financial inclusion by way of a multi-dimensional index in Bangladesh and found that out of 64 districts, 58 performed very low on the index.

Figure 2. Sampling Technique





Data and Research Methodology

For the purpose of studying financial inclusion at the micro-level, this study is based on data collected from primary sources in Bundelkhand region of India. Bundelkhand region is located in the centre of India and is presently divided between the states of Uttar Pradesh (U.P.) and Madhya Pradesh (M.P.), with the former covering seven districts and the latter covering six districts. The districts which are covered in Uttar Pradesh are - Mahoba, Hamirpur, Chitrakoot, Jhansi, Jalaun, Lalitpur, and Banda; whereas, the districts covered in Madhya Pradesh Bundelkhand region are : Chhatarpur, Datia, Sagar, Panna, Tikamgarh, and Damoh. The region is suffering from uneven rainfalls due to climate change for the past several years. For the purpose of sampling, data were collected by randomly selecting two districts each from U.P. and M.P. Bundelkhand region of India. A detailed pre-tested questionnaire was developed to collect data from 480 respondents from each of the four districts. The Figure 2 presents the sampling technique employed to collect data from primary sources.

The Figure 3 presents the access to finance by sampled households. Out of the total 480 respondents : (a) 28 respondents did not have any account in any formal financial institution, (b) 252 respondents were users of institutional credit ; whereas, 198 were using credit from non-institutional sources of credit like friends, family, big landlords ; (c) a total of 260 respondents had used their account at least once in the past year to deposit/withdraw money (other than availing credit); whereas 192 respondents did not use it.

Analysis and Results

The sample profile of the respondents is presented in the Table 2. Out of a total of 452 respondents who were having a bank account, 105 accounts were opened under the PMJDY scheme which was started in 2014. Majority of the respondents were men (80.42%). Distance from nearest financial institution was also considered. More than half of the respondents were at a distance of more than 5 kilometers from a bank. Regarding age, majority of the respondents (62.92%) were middle aged. The size of landholding represents that majority of the respondents were marginal and small farmers with landholdings less than 1 and 2 hectares, respectively. The sample presents good evidence on the fragmentation of landholdings in rural India where a majority of the farmers are either marginal or small. Regarding education, less than 15% of the respondents possessed formal education of more than 10 years. Majority of the respondents were either illiterate or having less than 5 years of schooling. The variable : years of banking has been used in the study to capture the effect of years of opening a bank account on effective use by the individual. It was expected that those who had an account for many years were more likely to use it.

Table 2. Sample Profile of the Respondents

Variables	Frequency	%
Usage of Bank Account for Deposit/Withdrawal		
Used account for deposit/ withdrawal	260	57.52
Did not use	192	42.48
Usage of Credit		
Users of institutional credit	282	58.75
Non-users of institutional credit	198	41.25
Gender		
Male	386	80.42
Female	94	19.58
Distance		
<5km	203	42.29
>5km	277	57.71
Age		
< 30 years	69	14.37
30-60 years	302	62.92
>60 years	109	22.71
Marital Status		
Married	449	93.54
Unmarried	31	6.46
Size of Landholding		
<=1 hectares	224	46.67
<=2 hectares	101	21.04
<=4 hectares	84	17.5
<=10 hectares	66	13.75
>10 hectares	5	1.04
Education		
<=5 years	210	43.76
<=10 years	205	42.71
>10 years	64	13.33
Caste		
OBC	304	63.33
SC	64	13.33
ST	8	1.67
General	104	21.67
Household Size		
<=4	145	30.21
4-8	225	46.87
>8	110	22.92
Years of Banking		
>1 year	167	36.87
1-5 years	94	21.67
<5 years	191	41.46

Table 3. Explanatory Variables Coding

Variable Name	Units of Measurement	Coded as	Code	Reference Category*
Gender	Dummy (male/female)	*X*1	1: male	
			0: female	1
Distance	in kilometers	*X*2	1: <=5km	
			2: > 5km	--
Age	in years	*X*3	1: 0-30	
			2: 30-60	
			3: 60 above	--
Marital Status	Dummy (married/not)	*X*4	1: married	
			0: unmarried	1
Size of Landholding	in hectares	*X*5	1: <=1 hectare	
			2:<=2 hectares	
			3:<=4 hectares	
			4:<=10 hectares	
			5: <10 hectares	--
Years of Education	in years	*X*6	1: <=5	
			2: <=10	
			3: >10	--
Caste	Dummy (OBC/SC/ST/General)	*X*7	1: OBC	
			2: SC	
			3: ST	
			4: GENERAL	4
Household Size	in number	*X*8	1: <=4	
			2: 4-8	
			3: >8	--
Years of Banking	in years	*X*9	1: < 1 year	
			2: 1-5 years	
			3: > 5 years	--

Note: Reference category is used for contrasting between dummy variables only.

The Table 3 presents the list of explanatory variables along with coding assigned to variables and the selection of reference category for categorical variables. The analysis was performed using the software IBM SPSS 22.

↳ **The Model Specification :** For the purpose of analysis, the binary logistic regression model has been employed. Here, the dependent variable *"y"* is a categorical variable, that is, it can take only two values. For our analysis, the outcome variable *"y"* takes the values 0 and 1. Technically, the choice of outcome variable is arbitrary. Here, since the outcome variable is measured on a nominal scale, therefore, the application of OLS was practically not possible. Further, the selection of reference category for categorical independent variables is also arbitrary. The researcher can choose any category as base category and make contrast comparisons. By default, SPSS uses the last category as the reference category, that is, if a particular variable has been coded as 1, 2, 3, and 4. By default, SPSS will take the last category, that is, "4" as the reference category.

The binary logistic regression model has been used to predict the probability of a household being formally

included or not. Here, we employ two models. In the first model, the dependent variable *y* is a categorical variable which takes the value 1 if the individual has used a bank account for savings/withdrawal purpose in the past one year and 0 otherwise. In the second model, the dependent variable *y* takes the value 1 if the borrower has used credit from institutional sources in the past one year and 0 otherwise. The results of both the models have been reported separately. The logit model is given by the following formula :

$$L_i = ln \left(\frac{(P_i)}{(1\text{-}P_i)}\right) - \alpha + \sum_{j=1}^{j=p} \beta_j X_j + \varepsilon_i$$

The probability of happening of an event to the probability of non-happening is called odds ratio and is given by :

$$\frac{P_i}{1\text{-}P_i} = e^{\alpha + \Sigma_{j=1}^{\rho} \beta_j X_j}, \; i = 1,2,3 \ldots \ldots nj = 1,2,3 \ldots . \rho$$

where, n = number of observations, p = number of explanatory variables.

The probability of happening of an event is defined as :

$$P\,(Y = 1 | X_1 \ldots . . \; X_p) = \frac{1}{1 + e^{-\alpha - \sum_{j=1}^{\rho} \beta_j X_j}}$$

The Cox and Snell R^2 for model 1 is .301 and Nagelkerke R^2 is .405. Further, Hosmer and Lemeshow test chi-square value of this test is 3.791 with significance .876 ($p > 0.05$) which indicates towards a good model-fit. The Table 4 presents the results of Model 1. It is found that out of nine variables used in the analysis : gender, age, size of landholding, caste, and household size are significantly associated with the use of account for deposit/withdrawal.

The Table 5 shows the two-way classification of actual and predicted outcome of the dependent variable. The

Table 4. Results of Binary Logistic Regression Model 1 (Dependent Variable "*y*" = Using/Not Using Bank Account for Deposit/Withdrawal)

Coding	Description of Variable	Parameter Estimates	Dof	Significance	Exp (β) Odds ratio
	Intercept	1.217		.133	
*X*1	Gender	-1.906	1	.000*	.149
*X*2	Distance	.012	1	.958	1.012
*X*3	Age	.397	1	.061**	1.487
*X*4	Marital Status	-.473	1	.345	.623
*X*5	Size of Landholding	.310	1	.005*	1.364
*X*6	Educational Attainment	.096	1	.587	1.100
*X*7	Caste (General as reference)		3	.030*	
	OBC	-.393		.180	.675
	SC	-1.154		.005	.315
	ST	-1.454		.147	.234
*X*8	Household Size	-.313	1	.092**	.732
*X*9	Years of Banking	-1.166	1	.367	.312

Table 5. Classification Summary

		(Actual)			
		Formally Included (*Y* = 1)		Formally Excluded (*Y* = 0)	
		N	**%**	***N***	**%**
Formally included	(*Y* = 1)	210	80.76	60	22.22
		(Sensitivity)		(Specificity)	
Formally excluded	(*Y* = 0)	50	24.47	132	68.75

Note: * significant at the 5%, ** significant at the 10 %.

Table 6. Results of Binary Logistic Regression Model 2 (Dependent Variable *"y"* = Borrowing from Formal/Informal Sources)

Coding	Description of Variable	Parameter Estimates *(B)*	Dof	Significance	Odds Ratio
	Intercept	-3.044		.000	
*X*1	Gender	-2.338	1	.000*	.097
*X*2	Distance	.014	1	.955	1.014
*X*3	Age	.434	1	.049*	1.544
*X*4	Marital Status	-.882	1	.091**	.414
*X*5	Size of Landholding	.354	1	.002*	1.424
*X*6	Educational Attainment	.458	1	.014*	1.580
*X*7	Caste (General as reference)				
	OBC	-.059	1	.846	.943
	SC	-.584	1	.164	.558
	ST	-.926	1	.354	.396
*X*8	Household Size	-.167	1	.380	.846
*X*9	Years of Banking	.987	1	.000*	2.682

Note: *means significant at 5%, ** means significant at 10%.

optimum sensitivity and specificity values are 80.76 and 68.75 at 0.50 cut-off probability. This model correctly classifies 75.66% of the cases [(210 +132)/452] for the given set of explanatory variables used in the model. The results of Model 2 are presented in the Table 6. First of all, to check the model fit, the Hosmer and Lemeshow test was applied. The chi-square value of Hosmer and Lemeshow test was 7.694 with significance .464 ($p > 0.05$), which indicates towards a good model-fit. The value of Cox and Snell R^2 is .332 ; whereas, the value of Nagelkerke R^2 is .447, which shows a good model fit. This value shows a moderate correlation between the independent variables and dependent variable used in the study. The use of Cox and Snell R^2 is limited since it cannot attain the value of 1 (Hair, Anderson, Tatham, & Black, 1998). Therefore, Nagelkerke R^2 is preferred, which is an improvement of Cox and Snell R^2.

The Table 7 shows the two-way classification of actual and predicted outcome of the dependant variable. The optimum sensitivity and specificity values are 86.52 and 67.67 at the 0.50 cut-off probability. This model correctly classifies 78.75% cases [(244 + 134)/480] for the given set of explanatory variables used in the model.

The results show that out of nine variables used in the model, the variables which are found to be statistically significantly associated with being a user of institutional finance are : gender, age, marital status, size of landholding, educational attainment, and years of banking. Exp *(B)* presents the odds ratio. To analyze whether the

Table 7. Classification Summary

		(Actual)			
		Formally Include (*Y* = 1)		Formally Excluded (*Y* = 1)	
		N	%	*N*	%
Formally included	(*Y* =1)	244	86.52	64	20.78
		(Sensitivity)		(Specificity)	
Formally excluded	(*Y* = 0)	38	22.10	134	67.67

probability of borrowing from an institutional source is same or does it vary for different levels (categories) of the independent variable, odds ratio is used. The ratio also predicts the magnitude of change in probability with different levels (categories) of independent variable. It tells the magnitude of occurrence of an event for first group in comparison with the reference group. For purpose of interpretation of odds ratio, the following rules apply :

(I) An event has equal chances of happening in both the groups if the odds ratio equals 1.

(ii) An event would more likely happen in the first group if the odds ratio happens to be greater than 1.

(iii) An event would more likely happen in the second (i.e. reference group) if the odds ratio is less than 1.

Discussion

Possession of a bank account may not fulfill the objective of complete financial inclusion until the bank account is used for savings/withdrawal/borrowing purposes. In this context, the present study has made an attempt to study financial inclusion via two parameters: use of bank account for deposit/withdrawal and use of formal sources of credit. Employing data obtained from 480 respondents, the results of the study indicate the significant association of the below mentioned factors with these two parameters at the micro - level :

(1) Gender : The variable of gender is negatively and significantly associated with being formally included. In both the models, it shows that as compared to males (reference category), females were less likely to opt for formal sources of financing as well as using an account for borrowing/savings purposes. It may be due to the fact that visiting a bank is a time-consuming process. The male members of a family generally go to a bank ; whereas, women are more engaged in household activities in rural areas. It takes several visits by the applicant to visit the bank branches to get a loan sanctioned. Women may try to avoid such inconvenience and hence the probability of a woman being formally included is less as compared to men. This finding is supported by the results of Allen et al. (2012), Johnson (2004), Hogarth and O'Donnell (1997), Sen and Prajapati (2013), and Sebopetji and Belete (2009).

(2) Age : The coefficient of age is positively and significantly associated with the probability of being formally included in both the models. It means that as age progresses, a household is more likely to be financially included. Age also represents the number of years of experience a respondent possessed. This experience is expected to increase his productivity and credit worthiness in eyes of the lender **(**Gershon, Onchan, & Raparla**,** 1988). This finding is in consonance with previous findings of Devlin (2009), Hogarth and O'Donnell (1997, 2000), Sen and Prajapati (2013), and Kaino (2005). It may find its explanation in the fact that land records in India are non-upgraded and land titles still rest with the member who is head and the oldest one. Therefore, loans are sanctioned to the person whose name appears on the records. Furthermore, as people become older, they are expected to take more rational decisions.

(3) Marital Status : Next, the coefficient of marital status is significantly and negatively associated with being formally included for Model 2, however, it is insignificant for Model 1. The results show that as compared to married households, the households which were unmarried were less likely to opt for formal sources of finance, although the variable is significant at the 10% level of significance. This finding is supported by the results of the studies: Allen et al. (2012); Cano, Esguerra, García, Rueda, and Velasco (2013); Karp and Nash-Stacey (2015), Sebopetji and Belete (2009); and Ibrahim and Aliero (2011).

(4) Size of Landholding : The coefficient of size of landholding is statistically significant for both the models and shows that land is an important determinant of being formally included in rural India. It shows that individuals who possess more land are more likely to use banking services for saving the extra revenue generated. Furthermore, they are more likely to get credit from institutional sources since they can offer land as collateral and can easily avail credit from formal institutions who insist on collateral-based lending. This finding has been supported by a large number of studies in the past like Sen and Prajapati (2013), Jumrani and Agarwal (2012), Reddy (2012), Basu (2005), Datta and Ghosh (2013), and Pal and Laha (2014). All these studies point towards the biasness in disbursement of institutional credit towards big landlords who possess more land as compared to small and marginal farmers. This is the biggest concern among policymakers and the government. Those who possess more land are more likely to be formally included than those who possess less of it. Banks consider large landholders as more credit-worthy borrowers than who those who are either landless or possess less landholdings. Holding access to land provides an incentive to make investments, and increases the ability of the poor to access financial markets (The World Bank, 2003).

(5) Caste : The variable of caste is significant in determining whether the use of a bank account is for deposit/withdrawal purposes. However, the negative coefficients show that as compared to general category (reference category), those belonging to lower castes like OBC, SC, and ST were less likely to access a bank for deposit/withdrawal. Among all, the caste category SC is statistically most significant in explaining the use of a bank account. Caste has been found to be significantly associated with studies like Pal and Laha (2014), Dev (2006), and Devlin (2009). However, studies like Kaino (2005) and Bhanot et al. (2012) did not find any such association.

(6) Years of Education : The coefficient of education is found to be statistically significant and positively associated with the use of credit from institutional sources. It shows that more educated households are more likely to opt for credit from formal sources than those who are less educated or illiterate. This finding has been previously supported by a large number of studies in India and outside India as well like Devlin (2009), Ibrahim and Aliero (2011), and Reddy (2012). Being educated, a person can understand the benefits of using the services of the formal financial sector. He/she can well understand the pros and cons of a financial system, and can take better and informed decisions. However, the variable is not statistically significant in predicting whether an individual used bank account for deposit/withdrawal or not.

(7) Household Size : The variable of household size is significant at the 10% level of significance with a negative coefficient in determining the probability of an individual using a bank account. It means that as size of household increased, the respondent was less likely to use a bank account for savings/withdrawal. This may be due to the increased burden of household consumption expenditure due to more non-earning members in the family. Previous studies like the ones conducted by Ibrahim and Aliero (2011) and Jumrani and Agarwal (2012) also found a similar association, however, the results are in contradiction with the study results of Devlin (2009) and Basu (2005), which did not find any such association.

(8) Years of Banking : The variable - years of banking is found to be statistically significant and positively associated with the use of credit from institutional sources. It means that those who had a bank account for past several years were more likely to opt for credit but it did not necessarily influenced their borrowing/savings habit. This may be partly due to bank's preference due to familiarity with the individual who is having an account for the past several years.

From the statistical analysis, it is amply clear that individuals who were financially included in terms of both use of bank account for savings/withdrawal of money and availing credit from institutional sources were: (a) more likely to be male respondents, (b) more likely to be in the older age group, and (c) more likely to possess large landholding size.

Practically, one can also see such a scenario in almost all banking institutions. Several government and NGO reports on the status of financial inclusion in India have pointed towards the unequal distribution of bank credit in India and have highlighted that male dominance is still prevalent in rural credit markets in India. This partly finds its explanation in terms of land records in the name of the family male head. Furthermore, the statistical results also point towards the disbursement of loans to older people as compared to younger ones. This may also be attributed to the land titles in India, which belong to old members of the family. Since banks need collateral to offer as security for loans, therefore, it is more likely that the individual who has a land title in his name will apply for a bank loan. Lastly, the results are also indicative of the biasness of bankers towards lending to large landholders. In India, the small and marginal landholders dominate the rural markets in terms of number, but the credit disbursement to these communities is the least as compared to the big landlords who possess easy collateral and are more preferred by bankers and other lending institutions. This tilt has been previously reported by several studies, the most prominent of which are : Basu (2005), Jumrani and Agarwal (2012), Sen and Prajapati (2013), and Chaudhuri and Gupta (1996).

Conclusion and Research Implications

This study justifies its title by providing an answer to the question - what are the factors which are significantly associated with access to financial services in Bundelkhand region of India, a region which is currently witnessing a spate of farmers' suicides and is suffering due to long-term neglect, uneven rainfalls, and climatic changes. Here, we have made an investigation into the factors affecting households' access to financial services in this region. The region is a good representation of rural India. By analyzing the results, we found that at the household level, factors like age, caste, household size, gender of the respondent, and size of landholding affected the respondent's access to financial services. Acknowledging the fact that mere account opening is not sufficient to make the financial system all-inclusive, this study has measured financial inclusion via two measures - usage of bank account for either savings or withdrawal (other than credit) and using institutional credit. Employing two models to predict the probability of an individual being financially included on both the parameters, we observed that age of the respondent, gender of the respondent, and size of landholding significantly affected the incidence of being financially included in rural India. Furthermore, we also observed that caste and household size were negatively associated with the use of a bank account for savings/withdrawal. Years of education and years of banking were significantly associated with the use of credit from institutional sources.

This study may prove helpful for policymakers in designing policies to promote financial inclusion in India. The results point towards the fact that besides several efforts, small and marginal landholders - who dominate the rural markets - still lack in accessing credit, and banks are biased towards lending to large landholders due to the fact that lending to them involves less default risk. Furthermore, age was found to play an important role in the financial inclusion of the masses such that more aged people are more likely to be financially included both in terms of savings/withdrawal and access to credit. This calls for a need to promote financial literacy among young

adults, which may promote usage of financial services by educating them regarding the benefits of participating in the financial system. The situation of small and marginal farmers is vulnerable and access to credit in Bundelkhand region of India remains low, and non-institutional sources of finance are a significant source of credit. Caste discrimination is still prevalent in rural India, and upper caste households were observed to be in a beneficial position than their other counterparts. The policymakers should frame policies to promote equal opportunities and benefits for all sections of the society in general and the hitherto deprived groups in particular.

Limitations of the Study and Scope for Further Research

This study is based on analysis of data collected from primary sources in Bundelkhand region of India with a sample size of 480 respondents. The study was conducted in Bundelkhand region only where people are suffering not only due to shortage of funds but also corruption issues, uneven weather, and therefore, the generalization of results should be done with caution. Limited time and financial constraints restricted the sample size. A few limitations of this study are - the study is based on households who borrowed from either institutional or non-institutional sources, and hence, households borrowing simultaneously from both sources were not covered under the scope of this study.

To get better insights, the results can be enhanced by increasing the sample size. Literature has identified a large number of factors to define the scope of financial inclusion in India as well as abroad. Such dimensions can be used by future researchers to study the multi-dimensional aspects of financial inclusion. Researchers may also include the dimensions of pension, funds remittance through bank accounts, etc. to study the level of financial inclusion at the household level. Employing ordered logit models and discriminant analysis may further provide deep insights into group differentials between groups of those who are financially included and financially excluded.

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