



Impact of Demographic Attributes on Financial Inclusion Among Tribal Population in Jammu and Kashmir (India)

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Abstract

The purpose of this study is to examine how demographic characteristics influencing the degree of financial inclusion among Jammu and Kashmir's tribal community. Demographic characteristics were measured by gender, age, marital status, income, occupation, and education. The primary data have been collected from the top four tribal districts of the Jammu and Kashmir region through a well-structured questionnaire. The logit regression results imply that demographic attributes significantly contributing to financial inclusion. The study has significant implications for regional financial institutions, central government, and local government in Jammu and Kashmir. Financial policy makers for this tribal people should be aware that eliminating financial disparity depends on demographic characteristics. The substantial unbanked population in these tribal areas offers banks a chance to access new markets. To encourage financial inclusion among these groups, financial policies should be developed and it is advised that banks make an effort to reach out to low-income households in tribal areas because doing so is both part of their social responsibility and a potential market for the banks. Despite the fact that the study uses data from four districts in Jammu and Kashmir, the results can also be used for other tribal regions as well.

Keywords: Demographic, tribal, logit, financial inclusion

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Introduction

Over the last two decades, scholars and policymakers have given financial inclusion more consideration as a possible source of economic gains (Barajas, Beck, Belhaj, & Naceur, 2020). According to Aziz and Naima (2021), Demirgüç-Kunt and Singer (2017), and Sahay et al. (2015), financial inclusion is seen as a key tool for achieving the Sustainable Development Goals of the United Nations. The UN 2030 Agenda for Sustainable Development acknowledges the critical role that financial inclusion plays in accomplishing the Sustainable Development Goals (SDGs) and eliminating inequality (SDG10) (Demir et al., 2022). Due to its potential to halt the cycle of poverty and reduce income inequality, financial inclusion has advanced on the global reform agenda and attracted significant attention (Omar & Inaba, 2020). Evidence has also demonstrated that increased financial access may, in the short run, aggravate economic disparities between beneficiaries and non-recipients, hence it is preferable to focus on expanding financial access for everyone rather than just the poor (Honohan, 2008). It advocates for everyone in society to engage in economic activity and utilise financial services in accordance with their requirements and available budgets (M Sarma & Pais, 2008). All people and businesses must have access to a variety of financial goods and services, including transactions, payments, savings, credit, and insurance, in order to satisfy their requirements in an affordable, practical, responsible, and sustainable way and it is known as financial inclusion (Le, Le, & Taghizadeh-Hesary, 2020). Financial inclusion improves individual and household welfare through an increase in entrepreneurial propensities, women's empowerment, investment in education, and risk management. It also increases individuals' ownership of transactions and savings accounts, payment facilities, access to credit, and receipt of remittances (Koomson, Villano, & Hadley, 2020). Financial inclusion refers to all programmes that help low-income individuals have access to and afford formal financial services (Omar & Inaba, 2020). By bridging these gaps and giving households and businesses better access to the resources required to fund consumption and investment, financial inclusion contributes to increasing economic activity (Omar & Inaba, 2020). If there are any obstacles or restrictions that hinder users from properly utilising their accounts, such as the distance between bank branches, the cost of transactions, or psychological obstacles (Diniz, Birochi, & Pozzebon, 2012; Kempson, Atkinson, & Pilley, 2004). Increasing access to the poor remains a significant problem for financial institutions since they have been ignored by formal financial institutions (Wang & Fu, 2022).

According to estimates from the World Bank, approximately 1.7 billion people lack access to financial services (Demirguç-Kunt, Klapper, Singer, Ansar, & Hess, 2017). In contrast, more than two-thirds of the adult population has access to these services. These are often poor demographic segments, vulnerable groups including rural residents, women, and families with low incomes who greatly benefit from fundamental financial services like saving, borrowing, payment, and insurance (World Bank 2014). Poverty reduction and social cohesion depend on poor and vulnerable groups of the economy having access to financial services (Sahoo, Pradhan, & Sahu, 2017). Financial inclusion has a greater impact on rural than urban regions in reducing poverty and poverty vulnerability (Koomson et al., 2020). By lowering poverty, financial inclusion is a crucial phenomenon for achieving socioeconomic growth at the individual level (Niaz, 2022). The objectives of financial inclusion are to ensure that vulnerable communities, such as low-income groups, have access to financial services and are financially included (Tay, Tai, & Tan, 2022).

Giving underprivileged people access to financial services is one way to empower them (Sahoo et al., 2017). The most marginalised or indigenous populations globally are tribal peoples (Busch et al., 2022). Despite the fact that India has one of the world's biggest populations of indigenous people (10.2 crore) (Negi & Singh, 2019), which make up 8.6% of India's population (census, 2011). One of the most socioeconomically impoverished segments of society are tribal communities (Negi & Singh, 2019). One of India's most vulnerable tribal groups is the Scheduled Tribes (Xaxa, 2014). More than 60% of people in the country live in poverty (Jha, Mishra, Sinha, Alatalo, & Pandey, 2017). They have not benefited from this economic expansion (Nandru&Rentala, 2020). Due to their lack of participation in national socioeconomic activities, tribal people often experience difficulties such as low literacy rates, limited access to public facilities, and geographical isolation (Kumar, Pathak, & Ruikar, 2020). The idea of financial inclusion has long been popular in India with the aim of reaching out to the unbanked people, bringing banking services to all members of society, and eliminating economic and social inequities (Nandru&Rentala, 2020). Numerous regions with sizable indigenous populations have poor infrastructure (Vyas et al., 2019).

Financial inclusion is the process of ensuring that everyone, especially the poor, has access to basic financial services in the established financial sector (Allen et al., 2016; Ozili, 2018). Financial inclusion may improve the overall economic well-being and quality of life of indigenous people. Financial growth is one of the factors affecting social inequality, specifically the disparity of financial inclusion of individuals. Increasing financial inclusion

might help reduce poverty to the desired level (Chibba, 2009; Neaime & Gaysset, 2018). For instance, research suggests that financial inclusion can be a tool for achieving financial development, economic growth, the reduction of income inequality, and the emancipation of people from poverty (Beck, Demirgüç-Kunt, & Honohan, 2009; Chibba, 2009; Demirgüç-Kunt, Klapper, Singer, & Ansar, 2018; Demirgüç-Kunt & Klapper, 2012).

A population's level of financial inclusion is significantly influenced by demographic characteristics. Financial inclusion was determined by gender, education, age, income, place of residence, work status, and marital status, according to the majority of researchers (Bhanot, Bapat, & Bera, 2012; Dar & Ahmed, 2021; Soumare, TchanaTchana, & Kengne, 2016; Tuesta, Sorensen, Haring, & Camara, 2015). Age, gender, marital status, degree of education, and religion are demographic variables that affect financial inclusion (Llanto & Rosellon, 2017). According to studies by Demirgüç-Kunt and Klapper (2012), Demirgüç-Kunt, Klapper, and Singer (2013), Efobi, Beecroft, and Osabuohien (2014), Fungáová & Weill (2015), Graham Saunders, Bendixen, and Abratt (2007), and Sinclair (2013), demographic factors like income, employment, and education are significantly associated with owning a bank account. The effects of financial inclusion on various demographic groups have received little attention. While there is some evidence that demographic variables like age, gender, and educational attainment have an impact on financial behaviour, there are few research that go in-depth on these relationships. For the purpose of developing efficient financial education and literacy programmes as well as promoting financial inclusion across all facets of the population, it is essential to comprehend how demographic characteristics influence financial behaviour. Attempts to develop tailored policies and initiatives to encourage financial inclusion among these populations are hampered by this vacuum in the research. Financial inclusion holds enormous potential for bringing the excluded people into the formal financial sector so they may have access to formal financial goods and services. Financial inclusion has been a prominent policy priority for the government of many developing and developing nations (Allen, Demirgüç-Kunt, Klapper, & Peria, 2016). Therefore, the purpose of this study is to examine how demographic characteristics play a key role in influencing the degree of financial inclusion among Jammu and Kashmir's tribal community.

Methodology

Survey instruments

A thorough review of the literature on the demographic traits led to the creation of the questionnaire (Bhat & Mishra, 2020; Célerier & Matray, 2019; Chattopadhyay, 2011; Cheronoh, 2019; Divya, 2013; Johnson & Arnold, 2012; Joseph, 2014; Kuri & Laha, 2011; Mindra & Moya, 2017; Moder & Bonifai, 2017; Murari & Didwania, 2010; Nandru, Anand, & Rentala, 2015; Ouma, Odongo, & Were, 2017; Park & Mercado, 2015; Ramakrishna & Trivedi, 2018; Mandira Sarma & Pais, 2011; Tuesta et al., 2015) and financial inequality (Allen et al., 2016; Bhanot et al., 2012; Demirgüç-Kunt & Klapper, 2012; Demirgüç-Kunt et al., 2013; Fowowe & Folarin, 2019; Fungáčová & Weill, 2014; Leeladhar, 2005; Ozili, 2018). Gender, age, marital status, education, income, and employment were the demographic parameters that were questioned. Gender was divided into two categories: "female" and "male." Five age ranges were taken into consideration: "18 to 24 years," "25 to 34 years," "35 to 44 years," "45 to 54 years," and "55 and above years." There were two options for marital status: "married" and "unmarried." The kind of profession was classified into four categories: "government employed," "self-employed," "student," and "unemployed." There are four levels of education that people prefer: "no schooling," "less than high school," "high school," and "college." The monthly income was calculated in Indian Rupees and was divided into five categories: "less than 5,000," "5,000 to 10,000," "100,000 to 15,000.," "15,000.," and "20,000 and above." STATA was used to code the whole set of replies for estimate. The gender codes for males and females were '1' and '0,' respectively. The age groupings were classified from "1-5", youngest to oldest. Married people were labelled as "1," whereas unmarried were marked as "0." From government employment to unemployment, four occupational groups were classified from "1-4". Levels of income were also coded from "1 to 5" while levels of education were coded from "1 to 4," ranging from no formal education to a college degree. Financial inequality was the dependent variable, and the items were quantified between 0 and 1, 0 indicates "No," and 1 means "Yes".

Sampling and Survey Method

Tribal residents of four selected districts in Jammu and Kashmir—Anantnag, Bandipora in the Kashmir division, Poonch, and Rajouri in the Jammu division—have selected for collecting primary data. Two districts from each of Jammu and Kashmir's two divisions have been chosen based on the concentration of the tribal people (census, 2011). A well-structured

questionnaire was utilised to gather responses from the tribal people using the convenient sampling technique. From the formula, Krejcie and Morgan (1970) determined that 347 households from each of the four districts' total of 600296 households provide the required sample. The respondents provided us with 416 valid responses. As a result, the sample size for this research is higher than that of Krejcie and Morgan's (1970) technique since bigger samples are often more accurate at predicting unknown parameters. 80 respondents from Anantnag, 55 from Bandipora, 150 from Rajouri, and 112 from Poonch provided full responses; one adult household member (age 18 or older) was interviewed in each case.

Estimated models

Financial inequality which is our dependent variable, was examined through three dimensions of financial inclusion that are ownership, savings, and borrowings; for three dimensions, we measured ownership of an account; savings at a financial institution, and borrowings from a financial institution, respectively (Fowowe & Folarin, 2019). The binary or dichotomous dependent variables are denoted by 0 or 1. Due to its widespread usage in estimating the choice model, the logit model was used for this investigation (Sanderson, Mutandwa, & Le Roux, 2018). The linear probability model, logit model, and probit model may all be used to explore the factors that determine financial inclusion since the dependent variable is binary (Ai & Norton, 2003; Caudill, 1988). When a case has qualitative dependent variables, the linear probability model expands the scope of the linear regression model. Given that probability should be between zero and one, the linear probability model's value exceeding or falling below one is an unrealistic possibility. Its error term, or variance, is thus not constant (Collins & Green, 1982). The adoption of the linear probability model was avoided because of the aforementioned flaws. The probit model or the logit model was an alternative. However, the logit model was used by the researcher because of its benefits over the probit model (Mhlanga, 2020). Compared to the probity model, the Logit model is easier to calculate and explain (Maddala, Li, & Srivastava, 2001; Mhlanga, 2020; Rao, Rao, Statistiker, Rao, & Rao, 1973). The logit model is preferable to the probit model as we are working with survey data (Potrich, Vieira, & Kirch, 2015; Sanderson et al., 2018).

For a dichotomous variable Y , which is scored as 1 and 0, the logit function (L_i) is given by the following equation:

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

where "odds ratio" refers to the proportion of the chance that the event takes place to the proportion of the probability that it does not take place. In the form of an equation, the Odds Ratio is represented as follows:

$$\frac{P_i}{1 - P_i} = e^{\alpha + \sum_{j=1}^{\mathcal{P}} \beta_j X_j, i=1,2,\dots,n, j=1,2,\dots,\mathcal{P}}$$

Where n = number of observations and \mathcal{P} = total number of explanatory variables. The probability of an event happening ($Y = 1$) is given by the following expression

$$P(Y = 1|X_1, \dots, X_{\mathcal{P}}) = \frac{1}{1 + e^{-\alpha - \sum_{j=1}^{\mathcal{P}} \beta_j X_j}}$$

The phase of the modelling process that is most important is the one in which the explanatory variables that are going to be included in the model are chosen. At this stage, having a solid grasp on the concept of interaction is absolutely necessary. Interaction effect occurs when the effect of explanatory variable (X_j) on response variable (Y) differs with the value of another explanatory variable X_k (commonly called the moderator variable (Barron & Kenny, 1986). The conditional relationships between two or more variables may be expressed using regression models by means of interaction terms (Brambor et al., 2006). Conditional hypothesis, as opposed to just assessing whether or not there is a relationship between X and Y , aims to understand the conditions and manner of that relationship, correctly portraying social reality in the process.

Results and Discussion

Data Normality

Two statistical variables, skewness and kurtosis, are assessed to look at the maximum deviation from normality (Hair et al., 2011). The accepted value for skewness and kurtosis is " $<\pm 3$ " (Bhat & Mishra, 2021). For all nine variables in our analysis, skewness, and kurtosis fall within the range of ' $<\pm 3$ ' (Table 1).

Table 1: Data normality

| Attributes | Skewness | Kurtosis |
|-----------------------|----------|----------|
| Gender | -0.89 | -1.22 |
| Age | 0.08 | -1.19 |
| Marital Status | -1.22 | -0.52 |
| Income | 0.41 | -0.78 |
| Occupation | 0.15 | -0.97 |
| Education | 0.86 | 0.34 |
| Ownership | -1.12 | -0.76 |
| Savings | -0.52 | -1.74 |
| Borrowings | 0.10 | -2.00 |

Profile of respondents

The demographic details of the residents who participated in our survey are shown in Table 2. For sample representative results, the statistically significant findings are displayed in Table 2, which shows the uneven distribution of gender characteristics among the 416 respondents (29.8% female; 70.2% male). Most respondents (25.5%) fell into the 45–54 age range. Regarding marital status, married respondents outnumbered single respondents by a significant margin (24% unmarried; 76% married). 36.1% of those polled make between 5000 and 1000 Indian rupees monthly. Regarding occupation, 34.4% of the sample unit is classified as self-employed, followed by 29.8% of respondents who are students and 13.5% who are unemployed. 60% of the sample units only have a high school education. 74.3% of respondents were found to be bank account owners in financial institutions, while 25.7% did not have or own bank accounts. 62.5% of respondents save money in official financial institutions, whereas 37.5% do not. 52.4% of the sample's respondents did not borrow money from formal financial institutions, compared to 47.6% of the respondents who did.

Table 2: Descriptive statistics

| Attributes | Frequency | Percent |
|--------------------------|-----------|---------|
| Gender | | |
| <i>Female</i> | 124 | 29.8 |
| <i>Male</i> | 292 | 70.2 |
| Age | | |
| <i>18-24</i> | 82 | 19.7 |
| <i>25-34</i> | 103 | 24.8 |
| <i>35-44</i> | 79 | 19 |
| <i>45-54</i> | 106 | 25.5 |
| <i>55 or older years</i> | 46 | 11.1 |
| Marital Status | | |
| <i>Unmarried</i> | 100 | 24 |
| <i>Married</i> | 316 | 76 |
| Income | | |
| <i>Less than 5000</i> | 92 | 22.1 |
| <i>5000-9000</i> | 150 | 36.1 |

| | | |
|------------------------------|-----|------|
| <i>10000-14000</i> | 84 | 20.2 |
| <i>15000-20000</i> | 76 | 18.3 |
| <i>More than 20000</i> | 14 | 3.4 |
| Occupation | | |
| <i>Govt employed</i> | 93 | 22.4 |
| <i>Self-employed</i> | 143 | 34.4 |
| <i>Student</i> | 124 | 29.8 |
| <i>Unemployed</i> | 56 | 13.5 |
| Education | | |
| <i>No schooling</i> | 77 | 18.5 |
| <i>Less than high school</i> | 251 | 60.3 |
| <i>High school</i> | 39 | 9.4 |
| <i>Collage</i> | 49 | 11.8 |
| Ownership | | |
| <i>Yes</i> | 107 | 25.7 |
| <i>No</i> | 309 | 74.3 |
| Savings | | |
| <i>Yes</i> | 156 | 37.5 |
| <i>No</i> | 260 | 62.5 |
| Borrowings | | |
| <i>Yes</i> | 218 | 52.4 |
| <i>No</i> | 198 | 47.6 |

Correlations between financial inclusion and demographic attributes of respondents

The pairwise correlation matrix presented in Table 3 shows the degree of correlation among the variables. Positive correlations exist between gender and age, marital status, savings, and borrowing. In contrast, the correlation between gender and income is negative. Age positively correlates with marital status, income, occupation, education, ownership, and savings. Additionally, there is a negative correlation between education and age. The Table 3 also demonstrates a positive correlation between marital status and income, occupation, ownership, and savings. Additionally, it has a negative correlation with borrowing and education. Income favorably corresponds to occupation, ownership, saving, and borrowing but adversely to education. With ownership, the occupation has a positive correlation and correlates negatively with education. Meanwhile, findings indicate a negative association between education and ownership, saving, and borrowing. In comparison, findings demonstrate a positive correlation between ownership with savings and borrowing. Last but not least, savings have a positive correlation with borrowing.

Table 3: Correlations results

| | Ownership | Savings | Borrowings |
|-----------------------|-----------|---------|------------|
| Gender | 0.013 | .125* | .137** |
| Age | .170** | .137** | 0.069 |
| Marital Status | .428** | .424** | .345** |
| Income | .254** | .225** | .169** |
| Occupation | .135** | 0.039 | -0.08 |
| Education | -.293** | -.270** | -.234** |

** . Correlation is significant at the 0.01 level (2-tailed); * . Correlation is significant at the 0.05 level (2-tailed).

Logit model of tribal respondents' demographic attributes and financial inclusion

Logit regression was used since we were aware that the dependent variables are binary. The results of this analysis are shown in Table 4. However, in order to simplify our study, we used Stata 14's margin function to assess the impacts of the marginal variables. We decided to evaluate the margin estimates since, technically speaking, they were less complicated and were more in line with probability theory. In other words, the margins provide the derivative of the chance that a conditioning variable would cause the dependent variable to equal one. This likelihood is derived from the relationship between the two variables. Since there is no change made to any of the other variables, the projected marginal coefficient for each variable reflects the likelihood that the dependent variable will likewise be valid.

Table 4: Logit regression results

| Variables | Ownership | | Savings | | Borrowings | |
|-----------------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|
| | Logit coefficient | Margins (dy/dx) | Logit coefficient | Margins (dy/dx) | Logit coefficient | Margins (dy/dx) |
| Gender | 0.535699 | 0.076232 | 1.812123*** | 0.283566*** | 2.110958*** | 0.336009*** |
| | (0.367804) | (0.051849) | (0.390716) | (0.056319) | (0.403513) | (0.057465) |
| Age | -1.41013*** | -0.20067*** | -1.80748*** | -0.28284*** | -1.87608*** | -0.29862*** |
| | (0.297297) | (0.039121) | (0.299636) | (0.040358) | (0.272511) | (0.034514) |
| Marital status | 3.083869*** | 0.438845*** | 3.41428*** | 0.534276*** | 3.127592*** | 0.497831*** |
| | (0.475632) | (0.055435) | (0.49121) | (0.059621) | (0.490091) | (0.063018) |
| income | 1.426652*** | 0.203018*** | 1.85711*** | 0.290606*** | 1.959477*** | 0.311897*** |
| | (0.323364) | (0.043007) | (0.322082) | (0.043989) | (0.307638) | (0.040626) |
| occupation | -0.47944** | -0.06823** | -0.82445*** | -0.12901*** | -1.18194*** | -0.18813*** |
| | (0.191404) | (0.026663) | (0.183152) | (0.026077) | (0.192445) | (0.02525) |

| | | | | | | |
|--|------------------------|-----------------------|------------------------|------------------------|---------------------------|--------------------------|
| education | -0.24528 (0.219765) | -0.0349 (0.031131) | -0.35731 (0.228857) | -0.05591 (0.035425) | -0.63204*** (0.241693) | -0.1006*** (0.037434) |
| Wald χ^2 (6) | 111.6526*** | | 93.08071*** | | 102.5693*** | |
| Pseudo R ² | 0.2263 | | 9.2793 | | 0.2992 | |
| Note(s): Robust standard errors in parentheses;***p < 0.01, **p < 0.05, *p < 0.1 | | | | | | |

Our findings, which are summarised in Table 4, indicate that the gender of respondents has a favourable impact, although one that is negligible. That is to say, gender is not a statistically significant driver of financial inclusion when it comes to ownership of a bank account in financial institutions. While the gender gap in terms of savings and borrowing from financial institutions is a positive and substantial driver of financial inclusion, it is also a barrier to financial inclusion. Males had a 28 percent and 33 percent chance, respectively, of saving money and borrowing money from a financial institution. Gender disparities matter in financial choices. Therefore, we took gender into consideration, and we came to the conclusion that it is not a statistically significant driver of financial inclusion when it comes to ownership of a bank account in financial institutions. In so far as gender in terms of savings and borrowing from financial institutions is both a positive and a key driver of financial inclusion, it is important to note. This results in a parameter estimate of around 0.28 and corresponding estimates of 0.33 for savings and borrowings, which indicates that males are approximately 28 percent more likely than females to hold savings in formal financial institutions. In contrast, males are 33 percent more likely than females to have borrowed money from formal financial organisations. This difference is due to the fact that males are more prone to take out loans.

According to Table 4, the findings imply that older respondents are less likely to be connected to financial inclusion than those in lower age groupings. This is the case when compared to all respondents. The likelihood of home ownership, savings, and borrowings will all drop by 20 percentage points, 28 percentage points, and 30 percentage points, respectively, for each additional year of age, assuming all other factors remain constant. It has been discovered that this negative coefficient is statistically significant, but only little so. The first thing that emerges from an analysis of our data is that the age of respondents has a negative impact on their ownership, savings, and borrowing behaviours within formal financial institutions. In terms of respondents' ownership of bank accounts, savings, and borrowings from formal financial institutions, the findings are in line with the theoretical expectations that were formulated prior to conducting the research. According to Table 4, the

findings indicate that respondents in older age brackets are less likely to have ownership of a bank account, savings, or borrowings from formal financial institutions than respondents in younger age brackets. This is the case for all three measures. That is, older respondents are less likely to own a bank account at a formal, financial institution (that is, 20% of older respondents are less likely to have bank account ownership), and older respondents are also less likely to have savings at a formal, financial institution (that is, 28%). In a similar vein, 33% of respondents who are older are less inclined to borrow from official financial organisations.

It has also been shown that marital status and income are favourable and important factors. That is, factors such as marital status and income have a significant role in determining financial inclusion. After marriage, there is a 43 percent increase in the likelihood of having ownership, a 53 percent increase in the likelihood of saving, and a 49 percent increase in the likelihood of borrowing money. There was a significant and positive correlation between marital status and property ownership, the amount saved, and the amount borrowed from regulated financial institutions. For example, respondents who are married are more likely to have a bank account at a well-known financial institution (43 percent), compared to respondents who are single (27 percent). However, respondents who are married, which makes up 53% of the sample, are more likely to have savings with recognised financial institutions. In a related vein, our research has shown that married respondents had a 49% increased likelihood of having taken out a loan from a conventional bank or other kind of formal financial organisation.

The results further state that the higher the household's monthly income, the higher the probability of the household being financially included. The relationship between income and ownership, saving, and borrowing from regulated financial institutions is also favorable. The finding backs up a study by Kombo (2021), who emphasized a favorable relationship between income and bank account ownership in a formal financial institution. The findings indicate that a one-unit increase in income improves the probability of owning a bank account by 20% in a formal financial institution, the probability of saving with a formal financial institution by 29%, and the probability of borrowing from a financial institution by 21%.

Occupation is negatively related to ownership, savings, and borrowings, indicators of financial inclusion or financial inequality. The results suggest that the unemployed are less likely to have ownership, savings, and borrowings from financial institutions. In other words, 68% of respondents who are unemployed are less likely to own a bank account in a formal

financial institution, and 12% of respondents who are unemployed are less likely to have funds in a formal financial institution. According to this, 18% of respondents who are unemployed are less likely to borrow money from established financial organizations.

Similarly, education has negative relations with financial instruments. The educated respondents are less likely to have inclined toward borrowing from financial inclusion. With a marginal impact parameter estimate of roughly 0.1006, it appears that respondents with higher levels of education are 10% more likely to borrow money from a financial institution. In other words, if the proportion of educated respondents rises by one, there is a 10% chance that people will borrow money from financial institutions.

Conclusion and implications

This study's objective is to explore the significance of demographic factors that are significant in influencing the degree of financial inclusion of the tribal community in the Jammu and Kashmir. For this research, the top four tribal districts in the Jammu and Kashmir were taken into account. A structured questionnaire was used for convenient sampling on selected samples. The findings imply that respondents in older age groups are less likely than respondents in younger age groups to connect to financial inclusion. The factors that most influence financial inclusion are marital status and income. The findings also show that the likelihood of a family being financially involved increases with household income. According to the findings, there is little evidence that jobless people take out loans from financial institutions. The review of literature indicates that demographic characteristics have a significant role in determining financial behaviour. Our research supports these conclusions. The aim of the current research was to fill a knowledge gap on the demographic characteristics that influence the financial behaviour of the tribal community in Jammu and Kashmir. An effort has been made to determine the influence of demographic characteristics in influencing financial behaviour based on the study's results.

The results of this study are useful in understanding how different demographic factors affect tribal people in Jammu and Kashmir's access to banking services. The study has significant ramifications for regional financial institutions, central government, and local government in Jammu and Kashmir. It is advised that banks make an effort to reach out to low-income households in tribal areas because doing so is both part of their social responsibility and a potential market for the banks. Financial policy makers for this tribal people should be aware that eliminating financial disparity depends on demographic characteristics. To encourage financial inclusion among these groups, financial policies should be developed. The

substantial unbanked population in these tribal areas offers banks a chance to access new markets. Despite the fact that the study uses data from four districts in Jammu and Kashmir, the results can also be used for other tribal regions as well.

References

- Abdu, M., Buba, A., Adamu, I., & Muhammad, T. (2015). Drivers of financial inclusion and gender gap in Nigeria. *The Empirical Econometrics and Quantitative Economics Letters (EEQEL)*, 4(4), 186-199.
- Alafeef, M., Singh, D., & Ahmad, K. (2012). The influence of demographic factors and user interface on mobile banking adoption: A review. *Journal of applied sciences*, 12(20), 2082-2095.
- Ai, C., & Norton, E. C. (2003). Interaction terms in logit and probit models. *Economics letters*, 80(1), 123-129.
- Allen, F., Demirguc-Kunt, A., Klapper, L., & Peria, M. S. M. (2016). The foundations of financial inclusion: Understanding ownership and use of formal accounts. *Journal of financial Intermediation*, 27, 1-30.
- Ammar, A., & Ahmed, E. M. (2016). Factors influencing Sudanese microfinance intention to adopt mobile banking. *Cogent Business & Management*, 3(1), 1154257.
- Aziz, A., & Naima, U. (2021). Rethinking digital financial inclusion: Evidence from Bangladesh. *Technology in Society*, 64, 101509.
- Barajas, A., Beck, T., Belhaj, M., & Naceur, S. B. (2020). Financial inclusion: what have we learned so far? What do we have to learn? *IMF Working Papers*, 2020(157).
- Beck, T., Demirgüç-Kunt, A., & Honohan, P. (2009). Access to financial services: Measurement, impact, and policies. *The World Bank Research Observer*, 24(1), 119-145.
- Beck, T., Demirgüç-Kunt, A., & Peria, M. S. M. (2011). Bank financing for SMEs: Evidence across countries and bank ownership types. *Journal of Financial Services Research*, 39, 35-54.
- Berhanu Lakew, T., & Azadi, H. (2020). Financial inclusion in Ethiopia: is it on the right track? *International journal of financial studies*, 8(2), 28.
- Bhat, A. A., & Mishra, R. K. (2021). Demographic characteristics and residents' attitude towards tourism development: A case of Kashmir region. *Journal of Public Affairs*, 21(2), e2179.
- Bhanot, D., Bapat, V., & Bera, S. (2012). Studying financial inclusion in north-east India. *International Journal of Bank Marketing*, 30(6), 465-484.
- Botrić, V., & Tomić, I. (2016). Self-employment of the young and the old: exploring effects of the crisis in Croatia. *Radni materijali EIZ-a*(3), 1-30.
- Busch, S. L., Houweling, T. A., Pradhan, H., Gope, R., Rath, S., Kumar, A., . . . Nair, N. (2022). Socioeconomic inequalities in stillbirth and neonatal mortality rates: evidence on Particularly Vulnerable Tribal Groups in eastern India. *International Journal for Equity in Health*, 21(1), 61.
- Cano-Sánz, C. G., Esguerra-Umaña, M. d. P., García-Bohórquez, N., Rueda-Gil, J. L., & Velasco-Martínez, A. M. (2013). Acceso a servicios financieros en Colombia. *Borradores de Economía*; No. 776.
- Caudill, S. B. (1988). An advantage of the linear probability model over probit or logit. *Oxford Bulletin of Economics and Statistics*, 50(4), 425-427.
- Célerier, C., & Matray, A. (2019). Bank-branch supply, financial inclusion, and wealth accumulation. *The Review of Financial Studies*, 32(12), 4767-4809.
- Cheronoh, B. (2019). *Modelling Socio-Economic and Demographic Determinants of Financial Inclusion Among Rural Women in Kenya*. University of Nairobi,

- Chibba, M. (2009). Financial inclusion, poverty reduction and the millennium development goals. *The European Journal of Development Research*, 21, 213-230.
- Collins, R. A., & Green, R. D. (1982). Statistical methods for bankruptcy forecasting. *Journal of Economics and Business*, 34(4), 349-354.
- Cull, R., Ehrbeck, T., & Holle, N. (2014). *Financial inclusion and development: Recent impact evidence*. Retrieved from
- Dabla-Norris, E., Ji, Y., Townsend, R., & Filiz, U. (2015). *Financial deepening, growth, and inequality: A structural framework for developing countries*. Retrieved from
- Dar, A. B., & Ahmed, F. (2021). Financial inclusion determinants and impediments in India: insights from the global financial inclusion index. *Journal of Financial Economic Policy*, 13(3), 391-408.
- Dell'Ariccia, G., & Pence, K. M. (2009). The Age of Reason: Financial Decisions over the Life Cycle and Implications for Regulation. Comments and Discussion. *Brookings Papers on Economic Activity*, 2009, 102-117.
- Demir, A., Pesqué-Cela, V., Altunbas, Y., & Murinde, V. (2022). Fintech, financial inclusion and income inequality: a quantile regression approach. *The European Journal of Finance*, 28(1), 86-107.
- Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2018). *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution*: World Bank Publications.
- Demirgüç-Kunt, A., & Klapper, L. F. (2012). Measuring financial inclusion: The global index database. *World bank policy research working paper*(6025).
- Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2017). Measuring financial inclusion and the fintech revolution. *The Global Findex Database*, World Bank Group.
- Demirgüç-Kunt, A., Klapper, L. F., & Singer, D. (2013). Financial inclusion and legal discrimination against women: evidence from developing countries. *World bank policy research working paper*(6416).
- Demirgüç-Kunt, A., Klapper, L. F., Singer, D., & Van Oudheusden, P. (2015). The global index database 2014: Measuring financial inclusion around the world. *World bank policy research working paper*(7255).
- Demirgüç-Kunt, A., & Singer, D. (2017). Financial inclusion and inclusive growth: A review of recent empirical evidence. *World bank policy research working paper*(8040).
- Desalegn, G., & Yemataw, G. (2017). Financial inclusion in Ethiopia: Using LSMS (Ethiopia socioeconomic survey) data. *Ethiopian Journal of Economics*, 26(2), 31-58.
- Diniz, E., Birochi, R., & Pozzebon, M. (2012). Triggers and barriers to financial inclusion: The use of ICT-based branchless banking in an Amazon county. *Electronic Commerce Research and Applications*, 11(5), 484-494.
- Divya, K. H. (2013). A study on Impact of Financial Inclusion with reference to daily wage earners. *Journal of Business Management & social sciences Research*, 2(6), 85-92.
- Djankov, S. (2008). *Who are the unbanked?* (Vol. 4647): World Bank Publications.
- Efobi, U., Beecroft, I., & Osabuohien, E. (2014). Access to and use of bank services in Nigeria: Micro-econometric evidence. *Review of development finance*, 4(2), 104-114.
- Fanta, A. B., & Mutsonziwa, K. (2016). Gender and financial inclusion. *FinMark Trust.-2016.-Policy research paper*(01), 1.
- Fowowe, B., & Folarin, E. O. (2019). The effects of fragility and financial inequalities on inclusive growth in African countries. *Review of Development Economics*, 23(3), 1141-1176.
- Fungáčová, Z., & Weill, L. (2015). Understanding financial inclusion in China. *China Economic Review*, 34, 196-206.

- Fungáčová, Z., & Weill, L. (2014). Understanding financial inclusion in China. *BOFIT Discussion Papers*, 2014(10), 1.
- Graham Saunders, S., Bendixen, M., & Abratt, R. (2007). Banking patronage motives of the urban informal poor. *Journal of Services Marketing*, 21(1), 52-63.
- Group, W. B. (2013). *Global financial development report 2014: Financial inclusion* (Vol. 2): World Bank Publications.
- Hair, J. F. (2011). Multivariate data analysis: An overview. *International encyclopedia of statistical science*, 904-907.
- Honohan, P. (2008). *Finance for all? Policies and pitfalls in expanding access*: World bank.
- Jha, S. K., Mishra, S., Sinha, B., Alatalo, J. M., & Pandey, R. (2017). Rural development program in tribal region: A protocol for adaptation and addressing climate change vulnerability. *Journal of Rural studies*, 51, 151-157.
- Johnson, S., & Arnold, S. (2012). Inclusive financial markets: is transformation under way in Kenya? *Development Policy Review*, 30(6), 719-748.
- Johnson, S., & Nino-Zarazua, M. (2011). Financial access and exclusion in Kenya and Uganda. *The journal of Development studies*, 47(3), 475-496.
- Joseph, D. (2014). A study on financial inclusion and financial literacy. *International Journal of Business and Administration Research Review*, 2(4), 126-134.
- Kaur, S., & Kapuria, C. (2020). Determinants of financial inclusion in rural India: does gender matter? *International Journal of Social Economics*, 47(6), 747-767.
- Kedir, A. (2003). Determinants of access to credit and loan amount: Household-level evidence from urban Ethiopia.
- Kempson, E., Atkinson, A., & Pilley, O. (2004). Policy level response to financial exclusion in developed economies: lessons for developing countries. *Report of Personal Finance Research Centre, University of Bristol*.
- Kombo, P. G. B. N. (2021). Analysis of the Microeconomic Factors of the Financial Inclusion of the Population in the Republic of Congo. *Theoretical Economics Letters*, 11(1), 100-115.
- Koomson, I., Villano, R. A., & Hadley, D. (2020). Effect of financial inclusion on poverty and vulnerability to poverty: Evidence using a multidimensional measure of financial inclusion. *Social Indicators Research*, 149(2), 613-639.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
- Kumar, M. M., Pathak, V. K., & Ruikar, M. (2020). Tribal population in India: A public health challenge and road to future. *Journal of family medicine and primary care*, 9(2), 508.
- Kuri, P. K., & Laha, A. (2011). Financial inclusion and human development in India: An inter-state analysis. *Indian Journal of Human Development*, 5(1), 61-77.
- Le, T.-H., Le, H.-C., & Taghizadeh-Hesary, F. (2020). Does financial inclusion impact CO2 emissions? Evidence from Asia. *Finance Research Letters*, 34, 101451.
- Leeladhar, V. (2005). Indian banking—The challenges ahead. *Studies in Indian Economy*, 2, 202.
- Llanto, G. M., & Rosellon, M. A. D. (2017). *What determines financial inclusion in the Philippines? Evidence from a national baseline survey*. Retrieved from.
- Maddala, G., Li, H., & Srivastava, V. K. (2001). A comparative study of different shrinkage estimators for panel data models. *Annals of Economics and Finance*, 2(1), 1-30.
- Mehry, E.-B., Ashraf, S., & Marwa, E. (2021). The impact of financial inclusion on unemployment rate in developing countries. *International Journal of Economics and Financial Issues*, 11(1), 79.

- Mhlanga, D. (2020). *Financial inclusion and poverty reduction: Evidence from small scale agricultural sector in Manicaland Province of Zimbabwe*. North-West University (South Africa),
- Mindra, R., & Moya, M. (2017). Financial self-efficacy: a mediator in advancing financial inclusion. *Equality, Diversity and Inclusion: An International Journal*.
- Mndolwa, F. D., & Alhassan, A. L. (2020). Gender disparities in financial inclusion: Insights from Tanzania. *African Development Review*, 32(4), 578-590.
- Moder, I., & Bonifai, N. (2017). Access to finance in the Western Balkans. *ECB Occasional Paper*(197).
- Mossie, W. A. (2022). Understanding financial inclusion in Ethiopia. *Cogent Economics & Finance*, 10(1), 2071385.
- Mugo, M., & Kilonzo, E. (2017). Community-level impacts of financial inclusion in Kenya with particular focus on poverty eradication and employment creation. *Central Bank of Kenya*, 13.
- Murari, K., & Didwania, M. (2010). Poverty alleviation through financial inclusion: an analytical study with special reference to India.
- Murcia Pabón, A. (2007). Determinantes del acceso al crédito de los hogares colombianos. *Ensayos sobre política económica*, 25(55), 40-83.
- Nandru, P., Anand, B., & Rentala, S. (2015). Financial inclusion in Pondicherry region: Evidence from accessibility and usage of banking services. *TSM Business Review*, 3(2), 1.
- Nandru, P., & Rentala, S. (2020). Demand-side analysis of measuring financial inclusion: Impact on socio-economic status of primitive tribal groups (PTGs) in India. *International Journal of Development Issues*, 19(1), 1-24.
- Neaime, S., & Gaysset, I. (2018). Financial inclusion and stability in MENA: Evidence from poverty and inequality. *Finance Research Letters*, 24, 230-237.
- Negi, D. P., & Singh, M. M. (2019). Tribal health in India: a need for a comprehensive health policy. *Int J Health Sci Res*, 9(3), 299-305.
- Niaz, M. U. (2022). Socio-Economic development and sustainable development goals: a roadmap from vulnerability to sustainability through financial inclusion. *Economic Research-Ekonomska Istraživanja*, 35(1), 3243-3275.
- Noor, M., Fourqoniah, F., & Aransyah, M. F. (2020). The Investigation of financial inclusions, financial literacy, and financial technology in Indonesia. *Jurnal Perspektif Pembiayaan dan Pembangunan Daerah*, 8(3), 257-268.
- NUGROHO, A., & PURWANTI, E. Y. (2017). *Analisis determinan inklusi keuangan di Indonesia*. Fakultas Ekonomika dan Bisnis,
- Oji, C. K. (2015). Promoting financial inclusion for inclusive growth in Africa.
- Omar, M. A., & Inaba, K. (2020). Does financial inclusion reduce poverty and income inequality in developing countries? A panel data analysis. *Journal of economic structures*, 9(1), 37.
- Ouma, S. A., Odongo, T. M., & Were, M. (2017). Mobile financial services and financial inclusion: Is it a boon for savings mobilization? *Review of development finance*, 7(1), 29-35.
- Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329-340.
- Park, C.-Y., & Mercado, R. (2015). Financial inclusion, poverty, and income inequality in developing Asia. *Asian Development Bank Economics Working Paper Series*(426).
- Potnis, D. D. (2014). Examining mobile banking in developing nations from pro- poor “context, culture, and community” perspective. *Proceedings of the American Society for information science and technology*, 51(1), 1-4.

- Potrich, A. C. G., Vieira, K. M., & Kirch, G. (2015). Determinants of financial literacy: Analysis of the influence of socioeconomic and demographic variables. *Revista Contabilidade & Finanças*, 26, 362-377.
- Ramakrishna, S., & Trivedi, P. (2018). Impact of Demographic Factors on Financial Inclusion: An Empirical Study. *Asia Pacific Institute of Advanced Research*. www.apair.org.au.
- Rao, C. R., Rao, C. R., Statistiker, M., Rao, C. R., & Rao, C. R. (1973). *Linear statistical inference and its applications* (Vol. 2): Wiley New York.
- Sahay, M. R., Cihak, M., N'Diaye, M. P., Barajas, M. A., Mitra, M. S., Kyobe, M. A., . . . Yousefi, M. R. (2015). *Financial inclusion: can it meet multiple macroeconomic goals?* : International Monetary Fund.
- Sahoo, A. K., Pradhan, B. B., & Sahu, N. C. (2017). Determinants of financial inclusion in tribal districts of Odisha: an empirical investigation. *Social Change*, 47(1), 45-64.
- Sanderson, A., Mutandwa, L., & Le Roux, P. (2018). A review of determinants of financial inclusion. *International Journal of Economics and Financial Issues*, 8(3), 1.
- Sarma, M., & Pais, J. (2008). *Financial inclusion and development: A cross country analysis annual conference of the human development and capability association*. Paper presented at the Proceedings of the Annual Conference of the Human Development and Capability Association, New Delhi, India.
- Sarma, M., & Pais, J. (2011). Financial inclusion and development. *Journal of international development*, 23(5), 613-628.
- Sethy, S. K., Mir, T. A., Gopinathan, R., & Joshi, D. P. (2023). Exploring the socio-economic attributes of financial inclusion in India: a decomposition analysis. *International Journal of Social Economics*.
- Shabir, S., & Ali, J. (2022). Determinants of financial inclusion across gender in Saudi Arabia: evidence from the World Bank's Global Financial Inclusion survey. *International Journal of Social Economics*.
- Sinclair, S. (2013). Financial inclusion and social financialisation: Britain in a European context. *International Journal of Sociology and Social Policy*.
- Soumare, I., Tchana Tchana, F., & Kengne, T. M. (2016). Analysis of the determinants of financial inclusion in Central and West Africa. *Transnational Corporations Review*, 8(4), 231-249.
- Tay, L.-Y., Tai, H.-T., & Tan, G.-S. (2022). Digital financial inclusion: A gateway to sustainable development. *Heliyon*, e09766.
- Teka, B., Nahusenay, S., & Asmare, T. (2020). Determinants of Financial Inclusion in East Gojjam, Ethiopia. *Journal of Applied Finance & Banking*, 10(4), 69-88.
- Timbula, M. A., Mengesha, T., Mekonnen, Y., & Kebede, M. (2019). Financial Inclusion and its Determinants among Households in Jimma Zone of Oromia Regional State, Ethiopia. *International journal of Commerce and Finance*, 5(2), 106-119.
- Triki, T., & Faye, I. (2013). Financial inclusion in Africa. *African Development Bank*, 146.
- Tuesta, D., Sorensen, G., Haring, A., & Camara, N. (2015). Financial inclusion and its determinants: the case of Argentina. *Madrid: BBVA Research*.
- Vyas, A., Creswell, J., Codlin, A., Stevens, R., Rao, V., Kumar, B., . . . Sahu, S. (2019). Community-based active case-finding to reach the most vulnerable: tuberculosis in tribal areas of India. *The International Journal of Tuberculosis and Lung Disease: the Official Journal of the International Union Against Tuberculosis and Lung Disease*, 23(6), 750-755.
- Wang, X., & Fu, Y. (2022). Digital financial inclusion and vulnerability to poverty: Evidence from Chinese rural households. *China agricultural economic review*, 14(1), 64-83.

- Wolbers, M. H. (2003). Job mismatches and their labour- market effects among school- leavers in Europe. *European sociological review*, 19(3), 249-266.
- Xaxa, V. (2014). Report on the high level committee on socio-economic, health and educational status of tribal communities of India.
- Yang, X., Huang, Y., & Gao, M. (2022). Can digital financial inclusion promote female entrepreneurship? Evidence and mechanisms. *The North American Journal of Economics and Finance*, 63, 101800.
- Zulfiqar, K., Chaudhary, M. A., & Aslam, A. (2016). Financial inclusion and its implications for inclusive growth in Pakistan. *Pakistan Economic and Social Review*, 54(2), 297-325.