Formal banks, semi-formal SHGs or informal moneylenders, who is better? a study of borrower credit preference in India

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The present study explores the factors driving borrowers' preference for formal banks, self-help groups (SHGs) and moneylenders. The study is based on a systematic survey of 839 rural borrowers from southern India, sampled from four districts with varied levels of credit access (surplus, constrained and moderate credit). The data was analysed using multinomial logistic regression in SPSS. Results show how banks and moneylenders exclude borrowers based on relative wealth and gender. SHGs service women borrowers but are preferred more by wealthier borrowers, highlighting intragroup inequalities. Yet, the three lenders service a variety of purposes, justifying their demand in the market. The study enhances understanding of rural borrowers' constraints concerning various credit sources. The implications of this study are as follows: one is identifying the lacunae in the formal banking system, which policy amendments could address. Two, the study recommends an investigation of intragroup inequalities within SHGs. Third, the study underscores the demand for multiple players in the rural credit markets and their contribution to the borrower's credit needs.

Keywords: Agency theory, banks, moneylenders, preference, self-help groups.

CREDIT discrimination on the grounds of caste and gender was observed in developing countries like India[1], prompting migration of the discriminated to urban areas, seeking wage employment[2].

Consequently, borrowers relied on multiple financial systems to manage the financial exclusion. Borrowing from pawn shops by pawning away possessions[3], purchasing consumer goods using flexible shop credit (*Fidao*) or lines of credit offered by retail stores[2], borrowing from payday lenders[4], and diverting credit from productive purposes to consumption needs[5] were some of the strategies that have existed across contexts. In essence, the underprivileged borrowers were subject to predatory inclusion[4] wherein they paid more to access loans, often used for consumption purposes.

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Banks practised financial exclusion on the grounds of compulsory collateral[6,7] and the limited purposes for which loans were extended (for agriculture and housing)[6,8]. Banks collaborated with moneylenders by extending credit to them during high-demand seasons. Moneylenders, in turn, lent to borrowers, particularly in seasons when loans were high in demand. In other words, moneylenders act as middlemen between banks and borrowers, particularly when shocks like natural calamities induce demand[9].

Self-help groups (SHGs) were designed to empower the borrowers through their enhanced agency[10], which achieved the same only if certain conditions like training and self-employment were met[11]. The social capital required for SHG membership was exclusive to dominant groups (males, upper castes and superior occupational classes), widening social inequality[12]. Furthermore, the credit disbursed through SHGs was diverted for consumption purposes[5,13].

Studies have examined the positives and negatives of formal banks (formal banks as nationalized banks and regional rural banks (RRBs), operating in rural Andhra Pradesh), semi-formal SHGs (semi-formal SHGs refer to the self-help groups extending credit through SHG–bank linkage programme) and informal moneylenders[13–15]. Very few, however, explored the interplay of the formal, semi-formal and informal lenders, their pros and cons and how they simultaneously address the individual borrowers' needs, from the individual borrowers' perspective. The present article addresses this gap by examining the following research questions: how do formal banks, informal moneylenders or semi-formal SHGs compare? Does financial exclusion by one source get addressed by the others? What credit terms of each of these lenders endear themselves to the borrowers the most? Is there evidence of predatory inclusion by moneylenders? Specifically, the study examines three research objectives: identifying the factors influencing individual borrowers' preference for formal banks, the factors driving individual borrowers' preference for semi-formal SHGs and the factors affecting individual borrowers' preference for informal moneylenders. The study builds a 3×2 matrix of drivers for borrower credit preference and the lack of preference thereof for each credit source. In this process, the study finds evidence of

financial exclusion by all three lenders on gender and relative wealth.

Literature review

Formal loans and barriers therein

Formal lenders had strict barriers of entry for loan applicants[16]. These entry barriers included longer waiting time, higher transaction costs, need for collateral[6,7], and limited purposes for which credit was extended[15]. Banks further discriminated against borrowers based on gender[17], family size (smaller families were preferred), education[18] and relative wealth[6]. In India, the average distance between an unbanked village and the nearest bank branch decreased from 43.5 km in 1951 to 4.2 km in 2019. Nevertheless, the average distance between villages populated by underprivileged groups and the nearest bank branch increased when RBI introduced liberalized branch expansion policies in 2005 (ref. 19). Effectively, bank expansion proliferated in the proximity of villages with better infrastructure and populated by the privileged groups. The underprivileged populations were denied bank access in comparison to the privileged[19]. These barriers meant formal loans were not freely accessible for all the borrower classes.

Informal lenders and the features therein

Informal lenders, in contrast, remained popular for centuries because of their flexible lending terms. Agricultural households, smaller farmers and landless workers in Karnataka preferred informal credit[20]. In the event of shocks like natural calamities, moneylenders lent to rural borrowers by borrowing from banks. Thus, banks and moneylenders shared a collaborative, vertical relationship, where an increase in the supply of bank loans led to increased credit supply through moneylenders[9]. In countries like Amsterdam, Uzbekistan, Brazil and Vietnam, informal lenders offered longer repayment terms and lent based on trust and were flexible and faster than formal lenders, they proliferated even when formal credit was available or when they were prohibitively expensive[2,3,7,10,18,21].

Interaction between formal and informal credit

A primary study in dry and irrigated villages in Karnataka showed how the prevalence of formal credit has not eliminated the need for informal credit[20]. The bank nationalization in India reduced the dependence on usurious moneylenders. The SHG-bank linkage programme was expected to positively impact the security and empowerment of the disadvantaged[10]. Nevertheless, high-interest moneylender loans continued to push borrowers into debt traps, as proved by experiments in India and the Philippines[22]. Yet, surveys showed how moneylenders continue to be a major credit source in Indian rural markets, underscoring the primacy of financial inclusion[14,23].

Microcredit and its role

In villagers, credit group members are replaced by moneylenders because of a lack of accessibility issues and the cost of reaching moneylenders'. In India, the difference between the banks' lending priority and the priority of borrowers when they applied for loans meant that SHGs provided an alternative, offering credit for purposes that banks refused to lend[24]. A similar trend was observed in Senegal, where female members from village banks (credit groups), were more accessible and inexpensive than male moneylenders[13]. In India, SHG interventions contributed to women's economic and socio-cultural empowerment while increasing their savings and income[8].

Microcredit mimicked the flexibility of informal loans while supporting small businesses with ideal credit terms in rural China[25]. The women-only SHGs in Tamil Nadu opened feminized markets for the banks' capital through peer pressure, group lending, joint liabilities and gender-based lending. The SHGs accessed collateral-free credit from formal banks and on-lent these loans internally, down-marketing the bank capital[26].

Microcredit and credit terms

Credit terms, as measured by interest rate, repayment time, time lag between application and approval of loan, and lenders flexibility, were adverse in a credit surplus environment (surplus measured by the number of SHGs and the volume of credit disbursed through SHGs), as compared to a constrained environment[7]. SHG benefits were cornered by males, the upper castes and the superior occupational classes, exacerbating the existing inequalities[12]. The compulsory demand for social capital for SHG membership, afforded only by the better off, led to the exclusion of the poorest of the poor. Consequently, moneylending thrived in India[27]. Microfinance institution (MFI) prevalence in AP reduced the interest rates of informal lenders only when there was less competition in the informal lending market. Where the competition in the informal markets was greater, MFI prevalence had no significant impact on the informal lending markets[12].

Research gap

Literature focused on credit discrimination based on gender, caste or marital status[1,27–30]. The literature further examined borrower strategies like transfer of formal credit for informal lending, borrowing from one source to repay another and credit diversion[5,10,13,29,30]. The fact that borrowers had to

resort to credit diversion points to the lacunae in both the formal and informal lending systems.

SHGs, in contrast, had several advantages. SHGs helped women access the elusive capital from the state, as well as that from moneylenders, which was used for meeting everyday cashflow needs[5,13], reduced adverse selection and moral hazard[31], reduced the default risk through an informational advantage[32], and earned agency to the women members, contributing to their empowerment[5,10]. Nevertheless, the benefits were unequal, with several in-group inequalities being noticed[12,33].

This study examines the individual borrowers' credit preferences and lack thereof for each of the three lender types. In particular, the study examines the influence of demographics, loan characteristics and borrower strategies on credit preference using the agency theory framework. Agency theory, capturing the principal-agent dilemma driven by the asymmetry of information and asymmetry of power between the principal and the agent, found application in various fields. This study applies the theory to the lender (principal) and borrower (agent) relationship, wherein the principal is at an advantage through information and power asymmetry vis-à-vis the agent. We test the framework through the following research objectives:

Research objective 1: To explore the factors driving individual borrowers' preference or the lack of the same for formal banks.

Research objective 2: To examine the factors driving individual borrowers' preference, or the lack of the same, for semi-formal SHGs.

Research objective 3: To understand the factors driving individual borrowers' preference, or the lack of the same, for informal moneylenders.

The principal–agent problem highlighted the information asymmetry between the principals and agents with conflicting interests. In an organizational context, the board of directors (the principals) experience a conflict of interest with the managers (agents), who are the paid employees of the principals. While the principals focus on profit maximization, the agent has an incentive to maximize his self-interest, often at the cost of the organization. Consequently, the principal has an interest in monitoring the paid agent, underscoring the information and power asymmetry between the two parties. Nevertheless, the principal is at an advantage in both the contexts (of information asymmetry and power asymmetry)[23,34].

In the micro-borrowing context, similar information and power asymmetry between lender-principals and borrower-agents was observed, wherein the agents were diffused in nature[35,36]. The diffused nature of the borrower-agents implies that the principals, beset with information asymmetry and the moral hazard problems, try to size ration borrowers, prompting the latter to borrow serially from multiple lenders. The agent-borrowers approach multiple lenders to meet their variegated credit needs. The lender principals select the relatively better-off and men for awarding the loan contracts. Despite the competition in the credit market, agent-borrowers appear to be at the receiving end, which drives their preference for a particular lender. Thus, the study supports the application of the agency theory in borrower credit preferences.

The conceptual framework in Figure 1 explains the relationship between dependent and predictor constructs. As shown above, the predictor constructs, namely borrower demographics, loan characteristics and borrower strategies are posited to predict the outcome construct, credit preference. Credit preference has three sub-components, namely preference for formal banks, preference for semi-formal SHGs and preference for informal moneylenders. We explain the results using the agency theory, wherein lender-principal and borrower-agent have an information asymmetry and power asymmetry.

Methodology

Data

In erstwhile Andhra Pradesh (AP) (prior to the reorganization of the state into AP state and Telangana state) banks extended credit to SHGs under the priority sector lending scheme[6], providing a fillip to SHGs. Consequently, the state had three prominent lenders in the rural areas – the formal banks, the semi-formal SHGs and the informal moneylenders.

Following the default crisis in AP, which compelled the MFIs to retract temporarily, we initiated the study to investigate rural borrowing, of which credit preference was one construct. Using two-state cluster sampling, the principal investigator interviewed 839 rural borrowers face-to-face in four districts of erstwhile AP. In stage one of clustering, we ranked the districts based on the number of bank-linked SHGs and the volume of credit disbursed through the SHGs. Society for the Elimination of Rural Poverty (SERP) online database provided information to facilitate

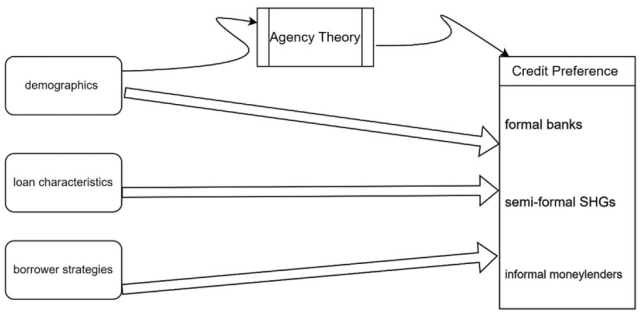

Figure 1. Conceptual framework.

the ranking. Next, we chose the top-ranked (Chittoor), bottom (Nalgonda), and two middle-performing districts (Adilabad and Srikakulam), representing credit surplus, credit-constrained, and moderate credit access environments. Following this, we chose villages from each of these districts at random. In stage two of clustering, we identified broad occupational groups (landed farmers, landless farmers, off-farm businesspersons, and workers) and savings and lending groups in these villages (SHGs, cooperatives/chit funds). We recruited survey participants by visiting local marketplaces, temples, farms and SHGs. We selected about 210 respondents from each of the 4 districts, adding up to 839 respondents.

We built an original survey instrument to gather information on the demographics of borrowers, loan information (with detailed questions on the top two loans) and borrowing behaviour. The study chose binary variables in most cases and a few categorical variables because these are easier to administer to semi-literate and illiterate rural respondents. The study measures the likelihood of a borrower choosing a particular credit source as the topmost or the bottom most priority, where category 2 is the reference category. Besides, we could identify the respondents uniquely, meaning they chose any one of the ranks to assign to the credit source (banks, SHGs or moneylenders). Thus, they validate the assumption of independent of irrelevant alternatives (IIA), which is essential for multinomial logistic regression. The validity of the method is evaluated using a log-likelihood test and a set of pseudo-R squares[35,37]. The null hypothesis of the zero coefficient of the predictor is assessed using Wald's statistic. Because of its flexibility and fewer assumptions, the method has found wide applications in social sciences, finance, medicine and humanities disciplines[37]. The model fitting information shows a *p*-value of 0.000, indicating the model's acceptability.

Table 1. Predictor variables

For borrowing behaviour
Number of banks in the village
Distance to the nearest bank in km
Interest on loan 1 per month
Time-lag between application and approval of loan 1
Due date of loan 1
Lenders' flexibility for loan 1
Interest on loan 2 per month
Time-lag for loan 2
Due date of loan 2
Lenders' flexibility for loan 2
Total current loans (Rs)
Source of loan 1
Use of loan 1
Purpose of loan 1
Repayment priority loan 1
Source of loan 2
Use of loan 2
Purpose of loan 2
Repayment priority loan 2
During time-lag postpone investment
During time-lag borrow from another source
Having a bank account?
Having a chit-fund/coop membership
No. of years of borrowing
Caste
Gender
Family size
No. of earning members in the family
Monthly income (Rs)
Trade
Education
No. of acres of farm owned
Income from crop 1 (Rs)

Method

The dependent variable, borrowers' preference for a particular credit source (banks, SHGs and moneylenders), has six levels. Table 1 lists the predictors. Ranks 1 and 2 collapsed into category 1; ranks 3 and 4 into category 2; and ranks 5 and 6 into category 3. Tables 2–4 show the drivers for borrower preference for bank, SHGs and moneylenders respectively using the multinomial logistic regression.

The study collected information about the top two loans to understand the terms of credit (loan size, interest rate per month, time-lag between application and approval of the loan in months, the repayment time in months, the source of loan and the purpose of loan) in the surveyed villages. Figures 2 to 8 show the details therein.

Results

Testing research objective 1: Exploring the factors driving individual borrowers' preference or the lack of the same, for formal banks.

Output for level 1 (Table 2)

Level 1 represents the borrowers prioritizing formal banks (ranks 1 and 2), as compared to those who assign ranks 3 and 4. Results are represented with respect to the odds ratio. An odds ratio higher than 1 implies increasing in the odds associated with a one unit increase in the predictor variable. An odds ratio of less than one indicates a decrease in the odds of the event for one-unit increase in the predictor[38].

Demographics

The demographics influencing the preference for formal banks (according to topmost rank) are the number of earners in the family and gender. For every additional earning member in the family, the odds of according to top preference to formal banks decrease by 49.7% ($p < 0.001$). Competition for the scarce collateral between the family members, which is important for formal banks, decreases the preference for banks when there are more earners in

Table 2. Output of multinomial logistic regression comparing distinct levels of credit preference

	B	SE	Wald	Sig.	Exp (B)	95% Confidence interval	
Variables – Level 1							
No of earning members in family	–0.687	0.193	12.713	0.000***	0.503	0.345	0.734
Income from crop 2	0.000	0.000	3.185	0.074*	1.000	1.000	1.000
No. of years of borrowing	–0.061	0.022	7.966	0.005***	0.941	0.902	0.982
Interest per month loan 1	0.244	0.122	4.048	0.044**	1.277	1.006	1.620
Loan 1 due date months	–0.023	0.011	4.395	0.036**	0.977	0.956	0.998
[Gender = MALE]	1.004	0.315	10.146	0.001***	2.728	1.471	5.060
[Do you have bank account = Y]	3.118	1.607	3.766	0.052*	22.590	0.969	526.522
[Do you have bank account = N]	2.816	1.651	2.910	0.088*	16.711	0.657	424.717
[Purpose of loan 1 = Agri]	1.697	0.704	5.809	0.016**	5.458	1.373	21.694
[Purpose of loan 1 = Housing]	1.920	0.730	6.927	0.008***	6.821	1.633	28.501
[Purpose of loan 1 = Education]	2.594	0.789	10.794	0.001***	13.381	2.848	62.876
[Source of loan 1 = SHG – Bank]	–2.389	1.378	3.005	0.083*	0.092	0.006	1.366
[Source of loan 1 = Mon Lenders]	–3.460	1.358	6.489	0.011**	0.031	0.002	0.450
[Source of loan 1 = Friends]	–3.406	1.562	4.753	0.029**	0.033	0.002	0.709
Variables – Level 3							
Intercept	7.302	2035.173	0.000	0.997		LB	UB
Income from crop 1	0.000	0.000	3.156	0.076*	1.000	1.000	1.000
Years of borrowing	0.068	0.038	3.189	0.074*	1.070	0.993	1.152
Total current loans	0.000	0.000	4.775	0.029**	1.000	1.000	1.000
[Do you have chit/coop membership = 4.0]	–2.120	1.071	3.922	0.048**	0.120	0.015	0.978
[Purpose of loan 1 = 1.0]	1.597	1.149	1.933	0.164	4.938	0.520	46.899
[Purpose of loan 1 = 2.0]	0.305	1.099	0.077	0.782	1.356	0.157	11.678
[Purpose of loan 1 = 3.0]	2.555	1.992	1.645	0.200	12.865	0.259	637.973
[Purpose of loan 1 = 4.0]	1.325	0.974	1.851	0.174	3.761	0.558	25.365
[Purpose of loan 1 = 5.0]	2.048	0.999	4.202	0.040**	7.752	1.094	54.921
[Purpose of loan 1 = 6.0]	1.720	0.882	3.804	0.051*	5.583	0.992	31.429
Purpose of loan 1 = 7.0	2.701	1.069	6.383	0.012**	14.894	1.832	121.065
[Lenders 1 flexible = 1.0]	–3.707	0.718	26.684	0.000***	0.025	0.006	0.100

B, Intercept of coefficient; SE, Standard error; Sig., Significance; Exp (B), Exponentiation of the B coefficient; LB, Lower bound; UB, Upper bound.

Dependent variable: Credit preference for formal banks (reference category: level 2).

Cox & Snell R square 0.558; Nagelkere R square 0.656; McFadden R square 0.43. *,**,*** represent 90%, 95% and 99% significance. Sample size: 770.

the family[39]. The odds of men preferring formal banks as a top credit choice is 2.72 times ($p < 0.001$), implying that men are more likely to prefer banks than women. Both these results point to the systematic exclusion by banks on the lines of relative wealth[18] and gender[5,17]. Gender-based exclusion points to the control of land collateral by men in India, where female farmers received a raw deal at the banks because of their poor knowledge of bank transactions and their weaker networks[17].

Loan characteristics

The loan characteristics that affect borrowers' preference for formal banks are interest rate and loan due date. A percentage point increase in the monthly interest for the topmost loan increases the odds of borrowers according to top preference for formal banks by 1.27 times ($p < 0.05$). Every unit (month) increase in the due date or repayment time of the topmost loan decreases the odds of borrower according to top rank to formal banks ($p < 0.05$). Of all the credit sources, formal, semi-formal and informal, bank loans are the cheapest[40]. Borrowers paying a higher interest rate to another lender prefer the cheaper bank credit. Wherever bank credit proliferated, there was a reduction in poverty in India[3].

Borrower strategies-loan purpose

Borrowing for agriculture and housing improves the odds of assigning top rank for formal banks by 5.45 times ($p < 0.05$) and 6.82 times ($p < 0.001$) respectively. Education borrowers are 13.8 times ($p < 0.001$) more likely to prefer formal banks. The priorities of the bank include agricultural credit, housing loans (offered against collateral) and education. Banks exacerbate borrowers' financial exclusion by limiting the purposes for which credit is extended (usually against a fixed collateral)[15].

Sources of loan

SHG borrowers and those borrowing from moneylenders are less likely to assign topmost ranks to formal banks (8% chance; $p < 0.1$; and 7%; $p < 0.05$ respectively). With their flexibility and social proximity, moneylenders undeniably service their borrowers better, explaining why their

Table 3. Output of multinomial logistic regression comparing different levels of credit preference

	B	SE	Wald	Sig.	Exp (B)	95% Confidence interval for Exp (B)	
Variables – Level 1							
No. of earning members in family	0.415	0.221	3.532	0.060*	1.514	0.982	2.332
Monthly income (Rs)	0.000	0.000	4.182	0.041**	1.000	1.000	1.000
No. of acres of farm owned	–0.137	0.077	3.165	0.075*	0.872	0.750	1.014
Time-lag 1	–0.279	0.125	5.005	0.025**	0.756	0.592	0.966
Loan 1 due date	–0.025	0.013	3.472	0.062*	0.975	0.950	1.001
Interest 2 per month	0.110	0.077	2.046	0.153	1.116	0.960	1.297
Time lag 2	0.157	0.073	4.596	0.032**	1.170	1.014	1.351
Loan 2 due date	0.007	0.021	0.127	0.722	1.008	0.967	1.050
No of banks in village	0.330	0.170	3.773	0.052*	1.392	0.997	1.942
[Gender = Male]	–1.884	0.335	31.681	0.000***	0.152	0.079	0.293
[Do you have chit-fund/coop membership = YES]	1.400	0.715	3.830	0.050**	4.056	0.998	16.487
[Purpose 1 of loan = Agri]	2.191	1.042	4.420	0.036**	8.947	1.160	69.008
[Purpose 1 of loan = business]	2.014	1.047	3.701	0.054*	7.495	0.963	58.333
[Purpose 1 of loan = Mrr/consume]	2.473	1.014	5.945	0.015**	11.861	1.624	86.609
Purpose 1 of loan = Education]	2.086	1.095	3.630	0.057*	8.051	0.942	68.828
[Purpose 1 of loan = Repay others]	3.505	1.983	3.125	0.077*	33.293	0.683	1622.177
[Repayment priority 1 = 1.0]	–1.103	0.361	9.319	0.002***	0.332	0.163	0.674
Variables – Level 3							
Intercept	39.992	919.822	0.002	0.965		LB	UB
Distance to bank (km)	–0.277	0.135	4.237	0.040**	0.758	0.582	0.987
Monthly income (Rs)	0.000	0.000	3.525	0.060*	1.000	1.000	1.000
Farm owned acres	–0.161	0.070	5.249	0.022**	0.851	0.742	0.977
Income from crop 1 (Rs)	0.000	0.000	2.970	0.085*	1.000	1.000	1.000
Interest 2 per month	–0.499	0.222	5.055	0.025**	0.607	0.393	0.938
No. of banks	–0.523	0.287	3.331	0.068*	0.593	0.338	1.039
[Do you have bank account = 1.0]	–4.142	1.892	4.793	0.029**	0.016	0.000	0.648
[Do you have bank account = 2.0]	–4.798	1.982	5.861	0.015**	0.008	0.000	0.401
[Purpose of loan 1 = 10.0	3.143	1.788	3.089	0.079*	23.162	0.696	770.574
[Source of loan 2 = 4.0]	–1.800	1.071	2.822	0.093*	0.165	0.020	1.350
[Repayment priority = 1.0]	–0.703	0.327	4.616	0.032**	0.495	0.261	0.940

Dependent variable: Credit preference for SHG-bank linkage loans (reference category: level 2).
Cox & Snell R square 0.534; Nagelkere *R* square 0.606; McFadden R square 0.359. *,**,*** represent 90%, 95% and 99% significance respectively.
Sample size: 728.

borrowers prefer banks less[7,10]. Likewise, a negative experience with SHG loans might explain the borrowers' lower preference for formal banks.

Output for level 3 (Table 2)

The borrowers assigning bottom-most ranks for formal credit (ranks 5 and 6), are mentioned as level 3.

Demographics

Those with chit-fund or cooperative membership have lower odds of assigning bottom-most ranks to formal banks compared to ranks 3 or 4 (odds of 88%; $p < 0.05$). Chit-fund and cooperative membership create a savings buffer, underscoring the borrowers' better financial planning. They are more likely to be eligible for bank credit and hence, are less likely to allot bottom ranks to formal banks.

For every year increase in borrowing experience, the borrower is 1.07 times more likely to assign bottom-most ranks to formal banks ($p < 0.1$). Experienced borrowers, possibly more creditworthy, are more likely to have borrowed from informal, flexible moneylenders. Consequently, they prefer the restrictive bank credit less. Yet they do not want to accord lowest priority to banks, who lend for agriculture every season. Hence the moderate ranking.

Loan characteristics

When the lenders are flexible, the borrower is 97.5% less likely to assign bottom-most ranks to banks ($p < 0.0001$).

Purpose of loan

Those borrowing for health and education are 7.75 times ($p < 0.05$) and 14.8 times ($p < 0.05$) more likely to assign bottom-most ranks to banks respectively. These rankings point to the possible difficulty in securing bank loans for health and education at stiffer terms despite banks being the preferred source for education loans.

Testing research objective 2: Examining the factors driving individual borrowers' preference or the lack of the same, for semi-formal SHGs.

Table 4. Output of multinomial logistic regression comparing different levels of credit preference

	B	SE	Wald	Sig.	Exp (B)	95% Confidence interval for Exp (B)	
Variables							
Intercept	–7.801	904.758	0.000	0.993		LB	UB
Bank distance (km)	–0.001	0.001	6.232	0.013**	0.999	0.998	1.000
Age	0.015	0.009	2.727	0.099*	1.015	0.997	1.033
Family size	–0.221	0.096	5.268	0.022**	0.801	0.663	0.968
No. of earning members	0.682	0.181	14.243	0.000***	1.978	1.388	2.818
Farm owned	0.096	0.056	2.929	0.087*	1.100	0.986	1.228
Total current loans	0.000	0.000	3.581	0.058*	1.000	1.000	1.000
Time lag 1	0.248	0.108	5.258	0.022**	1.281	1.037	1.583
[Gender = 1.0]	0.985	0.302	10.618	0.001***	2.677	1.481	4.841
Purpose of loan 1 = 2.0	–1.767	0.727	5.913	0.015**	0.171	0.041	0.710
Purpose of loan 1 = 6.0	–1.319	0.697	3.587	0.058*	0.267	0.068	1.047
Purpose of loan 1 = 7.0	–1.659	0.805	4.245	0.039**	0.190	0.039	.922
Source of loan 1 = 4.0	3.213	0.954	11.339	0.001***	24.855	3.830	161.293
Source of loan 1 = 6.0	2.431	1.208	4.048	0.044**	11.367	1.065	121.351
Repayment priority 1 = 1.0	1.008	0.293	11.849	0.001***	2.740	1.544	4.864
Time-lag borrow = 1.0	–4.364	2.034	4.601	0.032**	0.013	0.000	0.686
Time-lag post-pone = 1.0	–3.985	2.037	3.827	0.050**	0.019	0.000	1.008
Variables – Level 3							
Age	–0.037	0.022	2.788	0.095*	0.963	0.922	1.007
No. of earning members	0.584	0.302	3.754	0.053*	1.794	0.993	3.240
Monthly income (Rs)	0.000	0.000	9.936	0.002***	1.000	1.000	1.000
No. of acres of farm owned	0.152	0.067	5.167	0.023**	1.165	1.021	1.328
Income from crop 1 (Rs)	0.000	0.000	3.111	0.078*	1.000	1.000	1.000
Years of borrowing	0.054	0.033	2.726	0.099*	1.055	0.990	1.125
Loan 1 due date	0.025	0.013	3.545	0.060*	1.025	0.999	1.053
Interest 2 per month	0.131	0.060	4.661	0.031**	1.139	1.012	1.283
Due date 2 months	–0.045	0.025	3.319	0.068*	0.956	0.910	1.003
No. of banks in the village	0.931	0.316	8.670	0.003***	2.536	1.365	4.712
[Gender = 1.0]	–0.962	0.418	5.301	0.021**	0.382	0.168	0.867
Lender 1 flexible = 1.0	13.868	0.783	313.673	0.000***	105,413	227,182.0	489,125
During time-lag borrow = 1.0	–4.476	2.446	3.348	0.067*	0.011	9.418E-005	1.375
Time-lag postpone = 1.0]	–4.928	2.461	4.008	0.045**	0.007	5.818E-005	0.902

Dependent variable: Credit preference for moneylenders' loans (reference category: level 2).
Cox & Snell R square 0.521; Nagelkere *R* square 0.614; McFadden R square 0.389. *·**·*** represent 90%, 95%, 99% significance. Sample size: 777.

Output for level 1 (Table 3)

Demographics

Male borrowers are less likely to assign ranks 1 and 2 to SHGs, as compared to ranks 3 and 4 (decreasing odds of 84.8%; p value <0.0001). The gendered credit disbursal (for women) through SHGs implies that men who cannot access SHG credit directly would prefer them less.

Loan characteristics

The longer the time lag between application and approval of the highest loan, the lower the odds of a borrower assigning top priority to SHGs by 24.4% ($p < 0.05$). The greater time lag between the application and approval of a loan signals due diligence by lenders employed for sanctioning larger loans. If the borrower receives a larger loan from another source, he or she is less likely to prefer the rationed SHG credit.

Hence a lower preference for SHGs. Alternatively, if loan 1 is from SHGs, a larger time lag implies a delay in loan sanctioning. This would discourage borrowers from assigning the topmost rank to SHGs. Nevertheless, the time lag between the application and approval of the second largest loan, positively increases the borrowers' likelihood of preferring SHGs by 1.17 times ($p < 0.05$).

Borrowers finding their lenders flexible are less likely to assign top ranks to SHGs at 99% significance. This could be a pointer to the inflexibility of SHGs with regard to credit terms, loan sanction time, repayment time or peer pressure.

Borrower strategies-purpose of loan

The odds of agriculture borrowers and those borrowing for marriage and consumption spend and assigning top priority to SHGs are 8.95 ($p < 0.05$) and 11.86 ($p < 0.05$) respectively. SHGs' biggest advantage over banks is the variety of purposes for much one could borrow. Consumption credit,

denied by banks, prompts a higher preference by these borrowers for SHGs.

Output for level 3 (Table 3)

Demographics

For every unit increase in bank distance, the odds of bottom-most preferences for SHGs decrease by 24.2% ($p < 0.05$), pointing out how SHGs address the last mile problem in credit delivery.

Larger farm ownership decreases the odds of borrowers assigning bottom-most ranks to SHGs (14.9% lower odds; $p < 0.05$). Thus, the better-off prefer SHGs more than the poorest, pointing to the intragroup dynamics wherein the credit terms favour the better-off.

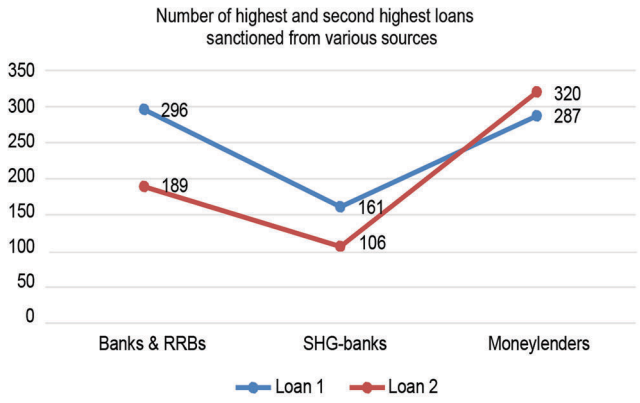

Figure 2. Total number of highest and second highest sanctioned loans from banks, SHGs and moneylenders. Figure compares the number of top two loans borrowed from banks and RRBs, SHG-banks and moneylenders. Both banks and SHGs issued a greater number of highest loans (loan 1). However, moneylenders issue a larger number of second highest loan (loan 2) – 320 against 287 of the highest loans (loan 1).

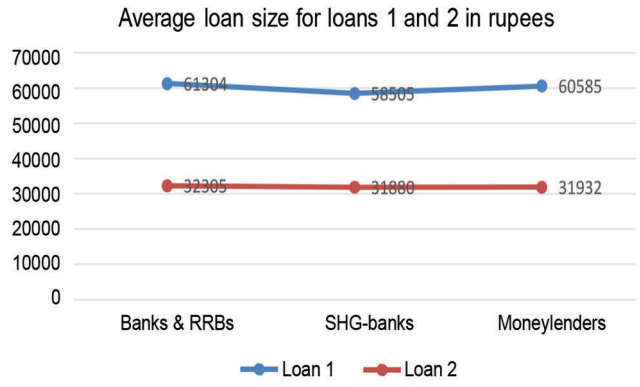

Figure 3. Highest average loan sizes for the highest loans, from various sources (in rupees). Figure shows the average loan sizes (in rupees), for the top two loans. Banks and RRBs issued larger average loans for the top two loan (loans 1 and 2), as compared to SHG-banks and moneylenders (Rs 61,304 and Rs 32,305 respectively).

Loan characteristics

A unit increase in the interest on loan 2 decreases the odds of a borrower assigning bottom ranks to SHGs (40% lower odds; $p < 0.05$), as compared to him/her assigning ranks 3 and 4. This could signify SHGs being a cheaper source of credit. An increased interest rate on the smaller loan would increase borrowers' preference for SHGs.

If the borrower accords top priority for repaying loan 1, he or she is less likely to assign bottom rank to SHGs (50.5% lower odds; $p < 0.05$).

Testing research objective 3: Understanding the factors driving individual borrowers' preference or the lack of the same, for informal moneylenders.

Output for level 1 (Table 4)

Demographics

For every additional family member, the odds of the borrower assigning the top-most ranks to moneylenders decrease

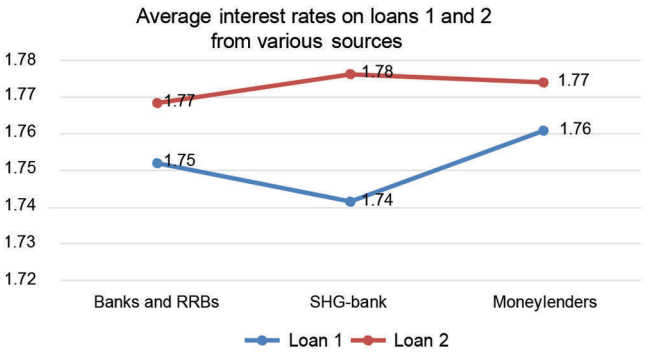

Figure 4. Average monthly interest rates for the highest two loans from various sources. Figure shows how the monthly interest rates are highest for SHG-bank loans for loan 1. Banks and moneylenders charge nearly the same interest rate. For loan 2, however, moneylenders charge the highest, followed by banks and RRBs and SHG-banks.

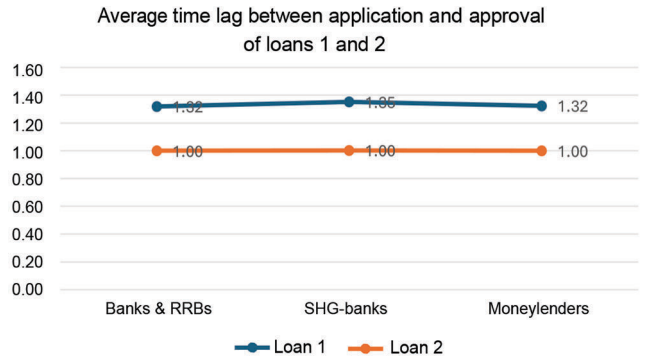

Figure 5. Time-lag between application and approval of the highest loans in months. Figure shows how the time-lag between application and approval of loan 1 is the same for banks and moneylenders but is the highest for SHG-bank loans. For loan 2, time-lag is same for all the lenders.

by 20% ($p < 0.05$). In contrast, when the number of earning members increases by one unit, the odds of the borrower assigning top-most ranks to moneylenders increases by 1.978 times ($p < 0.05$), compared to ranks 3 and 4. Those with larger families, relatively worse off, prefer moneylenders less, in contrast to the better-off with more earners in the family. The wealth bias of moneylenders is unmissable, who linked the default probability to household characteristics in Vietnam[6]. Contrastingly, informal lenders serviced all classes of customers worldwide and were preferred[3,7].

Men have higher odds of assigning top-most ranks to moneylender credit than women (odds ratio = 2.677; $p < 0.001$), pointing to the gender-based exclusion by informal moneylenders. Similar conditions exist in Senegal[41] and Vietnam[42] where moneylenders are inaccessible to the women. Gender-based exclusion, together with the wealth bias shows how moneylenders mimic the formal banks in servicing their clients, by practicing restrictive lending and systematic exclusion.

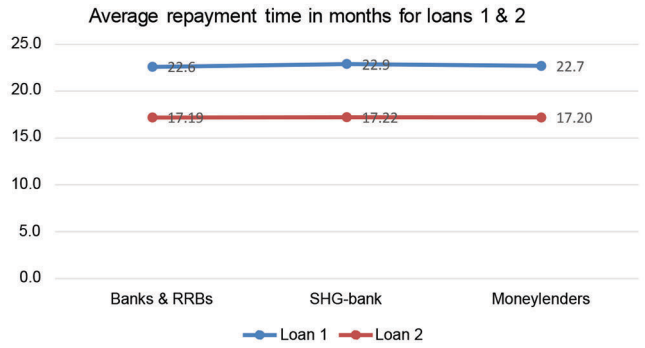

Figure 6. Average repayment time in months for the two highest loans from various lenders. Figure shows the average repayment time for the three lenders. The figure shows how for both the top loans, loan 1 and loan 2, SHG-bank loans offer maximum repayment time.

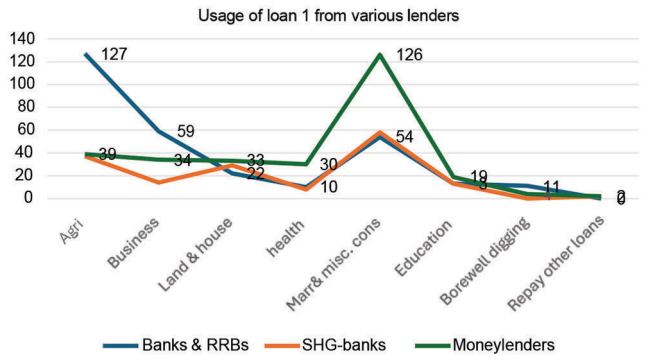

Figure 7. Usage of highest loan from various lenders. Agri, Agriculture; Business, small business investment; Land buy, buying land; Housing, repair of houses; Heath, health spend; Marr and Cons, marriage and consumption spend; Education, investment in education; Borewell digging, digging tube-wells/bore wells for irrigation. Figure shows how the three lenders, bank and RRBs, SHG loans and the moneylenders cater to different loan purposes. With respect to the highest loan, loan 1, bank and RRB loans are used mostly for agricultural purposes. SHG loans and moneylender loans are mostly used for marriages and consumption purposes.

Loan characteristics

For every unit increase in the time lag between application and approval of loan (in months), the odds of the borrower assigning top-most ranks to moneylenders increase 1.28 times ($P < 0.05$), as compared to him or her assigning ranks 3 and 4. Moneylenders are faster, with a lower time lag between application and approval of loan, making them a preferred credit choice for those seeking quick loans.

Borrower strategies – purposes of loan

Those borrowing for education (81% lower, $p < 0.05$) and small business investment (82.9% lower, $p < 0.05$) have lower chances of assigning topmost ranks to moneylenders, as compared to ranks 3 and 4. Those borrowing for education and business investment are serviced by banks and not effectively by moneylenders, pointing out how the credit markets need both formal and informal lenders. In rural credit markets, formal and informal lenders were not substitutes but complemented each other[43]. Empirical evidence from India showed a collaborative arrangement between banks and moneylenders, wherein the latter borrowed from banks to lend to rural borrowers in times of natural calamities like floods[44].

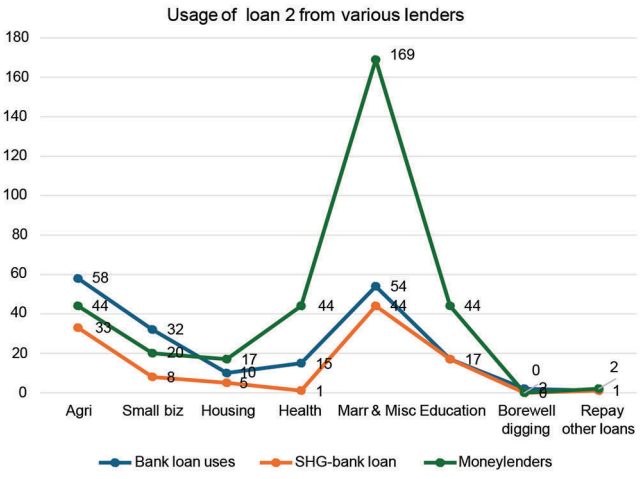

Figure 8. Usage of the second highest loan from various lenders. Agri, Agriculture; Business, small business investment; Land buy, buying land; Housing, repair of houses; Heath, health spend; Marr and Cons, marriage and consumption spend; Education, investment in education; Borewell digging, digging tube-wells/bore wells for irrigation. Figure shows how the three lenders, bank and RRBs, SHG-bank loans and the moneylenders cater to different loan purposes. With respect to the second highest loan, loan 2, all the three loans are used for marriages and consumption spend.

Borrower strategies – source of loan

The odds of those borrowing from moneylenders, assigning topmost ranks to moneylenders, are higher than those of assigning ranks 3 and 4 (odds ratio of 24.8, $p < 0.001$). Likewise, those borrowing from farmers or traders are more likely to assign top ranks to moneylenders rather than ranks 3 or 4 (odds ratio of 11.37, $p < 0.05$ respectively). That moneylender borrowers prefer them more is intuitive. Yet, borrowing from farmers or traders preferring moneylenders more, points to the interlinking of factor markets, where land, credit and labour worked hand in hand[25]. In Pakistan, the better-off, landowning farmers borrowed from larger farmers, whereas the worse-off and the landless borrowed from moneylenders, in clear evidence of credit layering[32].

Those who borrow from elsewhere during the time lag between application and approval of loan are more likely to assign ranks 3 and 4 to moneylenders' credit than assigning top ranks (odds ratio of 98.7%, $p < 0.05$). It is likely that the loan borrowed during the time lag is sourced from the moneylender himself. Borrowing during time lag is essentially a distress borrowing, which is anyway preferred less.

Output for level 3 (Table 4)

Level 3 represents the variables affecting the bottom-most ranking for moneylenders. The output for level 3 should be interpreted in comparison to level 2, which is, assigning ranks 3 and 4.

Demographics

For every unit increase in the number of acres of a farm owned, the odds of assigning a bottom-most ranking to moneylenders, increase (odds ratio = 1.165; $p < 0.05$). Despite their preference for the relatively better off, moneylenders are less preferred by the larger landowners, signifying the landowners' easier access to collateralized bank loans. For every unit increase in the number of banks in the village, the odds of the borrower assigning the bottom-most ranks to moneylenders increase (odds ratio = 2.54; $p < 0.001$), underscoring the Pecking Order Theory (PoH) in credit preference, where the formal credit is preferred more than the semi-formal and informal alternatives[40].

Men are less likely to assign bottom-most ranks to moneylenders and are more likely to assign ranks 3 and 4 (61.8% lower odds; $p < 0.05$), highlighting moneylenders' gender bias.

Loan characteristics

Those paying higher interest on loan 2 are more likely to assign the least ranks to moneylenders rather than assigning ranks 3 and 4 (odds ratio = 1.14; $p < 0.05$).

If the lender of loan 1 is flexible, the odds of the borrower assigning the bottom-most rank to moneylenders increases (odds ratio = 105,413, $p < 0.001$). This implies flexibility of formal banks and semi-formal SHGs, as measured by a larger loan size, lower interest rate, lower time lag between application and approval of loan and a longer repayment time, making moneylenders redundant. Conversely, moneylenders are preferred when lender of loan 1 is inflexible, much like those in Vietnam and Uzbekistan[42,45].

Borrower strategies

The borrowers postponing their investments in time-lag between application and approval of loan are less likely (99.3% lesser; $p < 0.05$) to assign bottom-most ranks to moneylenders, pointing out how moneylenders meet pressing needs of borrowers, potentially averting their investment postponement.

Discussion

The study explores research objectives 1, 2 and 3 by measuring the borrower preferences for formal banks, semi-formal SHGs and informal moneylenders. The findings show how the loan characteristics like the credit terms (interest rate, time-lag between application and approval of loan, repayment time and lenders' flexibility), bank distance; demographics like relative wealth, family size and gender, and borrower strategies like purposes loans, sources of loans, repayment priority, influence borrower credit preference. The purpose of credit is linked to where it is sourced from ref. 46. Findings show a clear wealth bias of all three lenders, the formal banks, semi-formal SHGs and the informal moneylenders, on the basis of gender and relative wealth. This leaves the poorest of the poor and the women underserved in the rural credit markets.

The idea of traditional moneylenders, flexible and accessible by all, preferred by the poor[25], is refuted by this study. Instead, they mimic the lending terms of the banks, exhibiting a clear wealth and gender bias. Consequently, the women prefer moneylenders less. Despite servicing women and addressing the last-mile connectivity problem of banks, SHGs are preferred by the relatively better off, pointing to the intra-group inequalities[38]. Credit groups consisting of heterogenous caste members often witness intragroup inequality, wherein the upper castes corner the leadership roles[38]. In erstwhile AP, perhaps to address this anomaly, the SERP-promoted groups tended to be homogenous in caste composition. Nevertheless, intragroup inequalities prevailed, with the leaders accessing most of the group benefits.

Managerial and policy implications

Different lenders prefer to lend for various purposes, which points to huge unmet credit needs among rural

borrowers. Policy initiatives like the fillip to the Non-Banking Financial Corporations (NBFCs), which fostered the growth of MFIs and peer to peer lending platforms, are necessary to address the unmet credit needs of rural borrowers.

The managerial implications of the study include sensitizing the formal lenders like bankers to the realities of rural credit markets so they can address the unmet credit needs in rural markets. Furthermore, SHG promoters should be able to work to reduce intragroup inequalities so the credit terms in SHGs are more egalitarian.

Limitations

An important limitation of this study is that we collected in the aftermath of the MFI meltdown in erstwhile Andhra Pradesh in 2014. The subsequent state reorganization into AP state and Telangana State (TS) filliped two separate microcredit programmes, namely Society for the Elimination of Rural Poverty (SERP) and SERP TS. These programmes serve rural female borrowers under various credit schemes at borrower-friendly terms. Besides, the NBFCs have become important players in the credit market. This study does not reflect the change.

Furthermore, the study is localized to erstwhile AP, with a small borrower sample, and does not necessarily reflect the reality across the credit markets in India.

Scope for future research

Future research could be based on contemporary data, wherein borrower preference for various credit sources is captured. The results therein could be compared to those in this study to underscore the changes in the credit markets.

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