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RESEARCH ARTICLE

Women's Participation in the Formal Financial Market in Nepal: Evidence from NLSS III Data

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Abstract

This study attempts to determine factors that influence women's autonomy and empowerment in Nepal, particularly whether there is gender bias on access to formal sources of credit. We look at women's land ownership status, access to credit from formal and informal financial institutions, decision to work outside of family, input to decision making on such family matters as accessing health services by a woman for herself and her children, sending children to school, and handling family finance. A probit model is applied to data from a living standard survey (NLSS III) for the borrowing households to see whether there is a gender-specific difference in participation in the organized credit market. The results do not display a significant difference between male and female borrowers. We also find that women-headed households borrow a larger amount on average than do male-headed households and discuss possible reasons for this. This raises the question about possible exclusion of many women who may not participate in the formal credit market and hence are not captured by the data on borrowing households. In addition to further investigation into a definitive answer to this question, future research can look into the existence or extent of discrimination along socio-demographic dimensions such as geographic region, economic status, caste or ethnicity. (*210 words*)

Keywords: *Women's participation, Formal financial market, Nepal, survey data, Probit model.*

JEL Codes: O16, O17, J16

Introduction

According to the World Bank [1], in developing countries "female farmers tend to have lower average productivity, farm smaller plots, and grow less profitable crops…largely due to *unequal access to productive inputs*. Female entrepreneurs typically operate in smaller firms and less profitable sectors" (italics added.) While small businesses, both formal and informal, contribute a considerable amount to the national output, most of these businesses are run by male owners or managers. Traditionally, the role of women in non-household economic activities has been limited in poor countries.

In Nepal, the situation has not been much different in the past. Access to finance has been easier for male-headed households than for those headed by women. Average schooling is also lower for women than for men. Over the last decade or more, however, Nepal has seen two important changes that could potentially enhance the role of women in social and economic activity outside of the household. First, the armed conflict between the state and the Maoist group (now an official political party) led to a more aggressive recruitment of soldiers, mostly male. As a result, more women began to head their households since they ended up making family decisions that otherwise would have been made by men. Second, emigration of male workers to neighboring India and other countries also had a similar effect when these workers would seldom return home.

In this research, we try to assess whether access to external finance is different for male- and female-headed households, and if so how much. In particular, is there any difference in the household and regional characteristics that cause different levels of participation in the financial market by households headed by men and women? We also make a distinction between formal and less formal or informal sources of credit to see whether female borrowers end up relying more on local moneylenders for credit and on more adverse terms than those offered by formal financial institutions. Apart from access to credit, a second obstacle women may encounter is that the size of loans approved for women could be smaller than for male borrowers. The twin aspects of the problem-whether female-headed households are equally likely to have access to formal finance and how much finance is available from the formal sources-form the central part of our research.

Literature Review

Sharma [2] studied relationships between micro-finance and women empowerment in Nepal. Using data from an empowerment related survey carried out during 2004-2006, Sharma's results show that micro credit participation increases women's empowerment in terms of greater access to financial and economic resources, among other things. Nilkantan et al. [3], however, found somewhat different results for a part of eastern India. Examining four dimensions of women empowerment they found micro finance to help on decisions about children but not on the other three aspects of empowerment.

According to Noreen [4], women empowerment in Bahawalpur district of Pakistan followed where women rather than men determined how loans were to be used but the effect was small. Sarumathi and Mohan [5] found for Pondicherry region of India that participation in micro finance through self-help groups led to a gradual increase in the psychological and social wellbeing of women, but an even slower improvement in their economic status.

Similar results have been found for African countries too. Research by Kato and Kratzer [6] shows that microfinance has been a successful tool in empowering women in Tanzania relative to women in non-program areas. Women members of microfinance institutions (MFIs) have more control over savings and income generated from the business, take greater decision-making role, and have more self-esteem, freedom of mobility, and activities outside home.

Ali et al. [7] analyzed data from Rajshahi division in Bangladesh. By constructing an aggregate index of empowerment from its five separate dimensions they find microfinance participation to explain empowerment as well as its components significantly. Chakraborty and Jayamani [8] show that microfinance makes poor women psychologically empowered enough to make decisions in family matters. In its World Development Report [1], the World Bank argued that "women's entrepreneurship can be fostered through a combination of *increased access to capital,* networks, and new markets; high-quality business skills and development training; and access to broader services that offset gender-specific constraints." (italics added.) Our goal in this paper is to look into access to capital for women of Nepal.

Data

We use data from Nepal Living Standard Survey III, the most recent round in the series, conducted in 2010/11. Despite limitations on the availability of usable data, we were able to extract a decent sample of several hundred female-headed households that had significant interaction with organized financial market. While 28 percent of the households were headed by women, few took loans from banks. Less than 25 percent of the households owned agricultural land, and only 58 percent (608) of such landowners cultivated their land. Workers' remittances from abroad have become a moderate to large source of income for 31 percent of the families.

Activities in the credit market show that 52 percent of the households took out loans. Yet only about a quarter of the borrowing households could access formal financial institutions for their needs. About a half of all the households in our sample borrowed from friends and relatives and a ninth from moneylenders. A frequency count of borrowers in the formal credit market (826 households) shows a bimodal distribution with most people (242) using Rs. 10,000 (about US $125) of loans, closely followed by those (237) converging toward Rs. 100,000. The most common purpose of borrowing for all the debtors in the formal or informal sector was purchase of nondurable goods followed by purchase of relatively durable goods. Loans were also taken for many different services and social and cultural activities including wedding ceremonies.

Table 1: Summary statistics

Variables	N	Mean	Std.Deviation	Minimum	Maximum
Org_market	826	.138	.344	0	1
JobsOwn_prpty	5988	1.78	.412	1	2
Age	5988	46	14.13	11	95
Gender	5988	.732	.442	0	1
Nchild	4629	2.60	1.64	0	12
Educ_level	3194	7.45	3.69	0	16
Rem_YesNo	5988	1.69	.463	1	2
Tot_incm	4177	4329	17759	1	720000
Lnremit_rec	1869	3.74	4.26	0	14.34
Lnincmpc	1527	6.18	1.52	.441	12.85
Lntot_incm	4177	3.066	4.14	0	13.48
Lnborpc	3713	8.89	1.68	-1.94	17.90
Remit_rec	1869	12720	74868	1	1700000
Rural	5988	.663	.472	0	1

For statistical analysis we divide amount borrowed by the household size to use per capita borrowing for each household (*borpc*). We also construct several categorical variables in the data. *Org_market* indicates whether a household obtained a loan or not (1 or 0) from an organized financial institution. *Gender* equals 0 for female and 1 for male. Households in rural location (*rural*) receive 1 and those in urban areas 0. If a household has received remittance money in the survey year, *Rem_YesNo* equals 1, else it is 2, and similarly if the household owns any property other than house and land, *Own_prpty* equals 1, else it equals 0. Continuous variables include total income (*Tot_incm*), amount borrowed per capita (*borpc*), remittance received (*Remit_rec*), age (*age*) of the household head, number of children (*Nchild*), and years of schooling completed (*Educ_level*)

Table 1 reports our summary statistics. Several continuous variables enter our regressions in their logarithmic form as they display lognormal distributions according to the Jurque-Bera test of normality.

Models and Results

We estimate two models-the first looks at factors that determine access to formal finance, and the second explores factors affecting the size of borrowed loans. For the first, we estimate a probit model for households that borrowed money from any source. Our main objective is to explore whether there is a gender-specific difference in participation in the organized credit market. Our starting hypothesis is female-headed households will have a lower probability of participating in the organized sector unless favorable socio-political changes that have occurred over the last decade in Nepal have made women's participation more likely. To see the effect of gender on such probability, we control for variables that are relevant for access to organized finance. Higher, for example, is the household income per capita, less will be the need for borrowing to finance consumption. Higher income may, however, make the household more creditworthy in obtaining a loan for business or farm investment. Since the survey data did not provide a detailed breakdown of borrowed funds by purpose, it is not clear whether a higher income can be expected to raise or lower the probability of a loan from the organized market.

Remittances make greater consumption more affordable as does an increase in other sources of income. Yet, large remittance receivers in Nepal have been known to purchase land to raise their future income, to build human capital in their children, and to repay the loans borrowed earlier. Remittances may thus create supplemental need to borrow for the first two of these purposes. Thus, it is not clear whether remittances raise the probability of participation in the formal financial market. With respect to education, we expect higher education of the household head to lead to greater access to organized finance. In terms of age, older borrowers may in general care more about preserving their reputation in the credit market and therefore be more credible in the eyes of a lender. Thus age should positively correlate with access to formal finance. Finally, we control for the number of children in the family to see if larger households with a higher dependency ratio will lower the chances of participating in the organized credit market.

Results of the probit model appear in Table 2. The table shows that gender has a negative coefficient but it is statistically insignificant. It appears that female headed households do not necessarily receive a more adverse treatment in the formal credit market. This is a surprising result relative to our initial hypothesis.

We expected per capita income within the household to have an ambiguous effect on the participation in the credit market. Its effect on access is not significant. Furthermore, the remittance receipt dummy is significant at the 5 percent level with a negative sign which indicates that the need for access to formal finance is smaller with remittance inflows.

The second part of our exercise looks at the determinants of the size of borrowed loans. The results are shown in Table 3 on first of the two columns. All the explanatory variables in this regression show statistical significance. Importantly, however, the coefficient of *Gender* is negative. Its value in the dataset equals 0 for female and 1 for male which implies that compared to women, male borrowers receive lower amounts in loans (by about 28 percent) after controlling for other factors. As with the credit access regression, this is a surprising result and is investigated further in section 4.1. Among other variables, education level and remittances received are both positively correlated with loans borrowed and probably reflect greater creditworthiness in the financial market for educated and remittance receiving households. Number of children, ownership of other property, and rural residency show a negative relationship with loan amounts.

Table 2: Results of probit model (Dep. variable: borrowed from organized market; 1 if yes, 0 if no)

Org_market	Coefficients(1)	Marginal Effects (1)	Coefficients(2)	Marginal Effects (2)
Own_prpty	–0.598***	–0.0438***	–0.249	–0.0713
	(.147)	(.009)	(.347)	(0.096)
Age	0.022***	0.01246***	0.032	0.06
	(.0068)	(.00369)	(.021)*	(.023)
Gender	–0.109	–0.0436	–0.291	–0.0877
	(.191)	(.028)	(.411)	(.0.094)
Nchild	–0.026	0.0073	0.00341	0.00012
	(.031)	(.011)	(.0833)	(.023)
Educ_level	0.0613***	0.0154***	0.121**	0.0311**
	(.014)	(.00382)	(.038)	(0.009)
Rem_received	–0.139**	–0.167**		
	(.053)	(.074)		
Lnincpc	0.038	0.0067	–0.0091	–0.0024
	(.049)	(.0424)	(.101)	(.027)
Lnremit_rec			–0.031	–0.217
			(.094)	(.276)
Constant	–1.812***		–1.43	
	(.546)		(1.37)	
N	686	686	686	686
R-Squared	.0473	.0473	.1379	.1379

***: significant at 1%, **: significant at 5%, *: significant at 10%.
Numbers in parentheses indicate standard errors.

Endogeneity

Remittances are likely endogenous in Nepal. A substantial proportion of the households that send one of their members abroad to work borrow to cover the cost of travel and for the initial setup cost at the new place of residence. Thus, at least for the first few years of foreign work, remittances are likely to respond to the amount borrowed prior to going abroad. If the family of the migrant worker has some agricultural land that was placed as collateral for loans, there will be a greater chance that the worker will send remittances back to the family. From the available data, it is possible to use agricultural land as an instrument for remittances. Similarly, a more educated individual has a greater likelihood of finding a job that has some skill requirement than the probability of a job for a less educated individual.

The result of the instrumental variable (IV) regression is shown in column two of Table 3.

We see that three variables-education, remittance received and rural-are no longer significant. More importantly, *Gender* which showed a more favorable outcome for women earlier has now lost statistical significance. This raises the question whether women-headed households are not necessarily discriminated against in the credit market. No discrimination would occur if the likelihood of loan approval was about equal for all regardless of gender. However, what if women end up taking loans more from the unorganized market at more adverse terms, even though when their loans are actually approved in the formal sector, they do receive a larger amount on average? This is an important question that needs further investigation with more comprehensive data to be available in future from the next round of the survey.

Table 3: Logarithm of amount borrowed per person

Variables	Coefficient OLS	Coefficient IV
Own_prpty	–0.5213***	–0.331**
	(.117)	(.124)
Age	0.041***	0.044*
	(.0097)	(.021)
Gender	–0.282**	–0.133
	(.086)	(.229)
Nchild	–0.188***	–0.193***
	(.044)	(.069)
Educ_level	0.113***	0.091
	(.038)	(.075)
Lnremit	0.096***	0.376
	(.046)	(.299)
Rural	–0.681**	–0.166
	(.315)	(.542)
Constant	11.57***	8.812**
	(.867)	(4.18)
N	269	269
R-Squared	.461	.283

Lnremit is instrumented by *agland;* see text.
***: significant at 1%, **: significant at 5%, *: significant at 10%.
The numbers in parentheses indicate standard errors.

Conclusion

This study has shown the importance of factors that influence women's autonomy and empowerment through their access to formal financial markets of Nepal. We look at women's land ownership status, access to credit from formal and informal financial institutions, decision to work outside of family, input to decision making on such family matters as accessing health services by a woman for herself and her children, sending children to school, and handling family finance. A probit model is applied to data from a living standard survey (NLSS III) for the borrowing households.

The results show that the difference between male and female borrowers is not highly significant. Women-headed households are also found to borrow a larger amount on average than do male-headed households and we discuss possible reasons for this.

The results raise further questions about existence or extent of discrimination along socio-demographic dimensions such as geographic region, economic status, caste or ethnicity. The issue of self-selection can also be important with regard to women's participation in the formal as well as informal credit market. If women have the perception that their loan applications will face a high prospect of denial, they may opt out of the market altogether. This can be examined further econometrically. Data from a future round of the survey (NLSS IV) can be expected to help in answering this question.

References

1. World Bank (2013) Gender at Work: Emerging Messages. A companion report to World Development Report on Jobs. Washington DC.
2. Sharma PR (2007) Micro-Finance and women empowerment. The Journal of Nepalese Business Studies, 4(1):16-27.
3. Nilkantan R, Datta SC, Sinha P, Datta SK (2013) The impact of microfinance on women empowerment: evidence from eastern India. International Journal of Development and Conflict, 3(2):27-40.
4. Noreen S (2011) Role of Microfinance in empowerment of female population of Bahawalpur district. IPEDR, 4(3):318-324.
5. Sarumathi S, Mohan K (2011) Role of Micro Finance in Women's Empowerment (An empirical study in Pondicherry region rural). Journal of Management and Science, 1(1):1-10.
6. Kato MP, Kratzer J (2013) Empowering women through microfinance: Evidence from Tanzania. ACRN Journal of Entrepreneurship Perspectives, 2 (1):31-59.
7. Ali J, Nessa T, Abdul-Hakim R (2012) The impact of Microcredit Program on women Empowerment: Evidence from Bangladesh. OIDA International Journal of Sustainable Development, 3(9):11-20.
8. Chakraborty R, Jayamani CV (2013) Impact of Micro finance on Women empowerment in Chittagong. IOSR Journal of Economic & Finance, 2(1):28-34.

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