Impact of Monitoring Activities and Social Ties on the Repayment Problems of group-Based Lending-Evidence from Vietnam

Tran Ba-Tri*, Loc Dong Truong, Pham Phat Tien

School of Economics, Can Tho University, Vietnam

Corresponding Author*

ABSTRACT

This study examines how monitoring activities by group leaders and social ties within groups influence repayment rates in the Vietnam Bank for Social Policy's group lending program in the Mekong Delta. Data used in this paper was obtained from a survey of 675 members from lending groups in five provinces in the Mekong Delta in September 2022. The analysis finds a negative relationship between the leader's social ties and repayment rates, implying that strong social ties might hinder enforcement. However, the impacts of delegated monitoring activities exhibits mixed results. On one hand, group size, proxying for monitoring intensity, reduces loan default. On the other hand, long time serving as group leaders, and frequency of visiting of group leaders to other members have unexpected impacts.

Keywords: group lending, repayment problem, monitoring, social ties.

JEL Classification: D26, D82, G21, G51, O16

INTRODUCTION

Asymmetric information between borrowers and lenders creates challenges such as moral hazard and adverse selection, particularly hindering credit markets in developing economies (Stiglitz and Weiss, 1981). The poor often lack the collateral required for loans, limiting economic growth and perpetuating poverty (Stiglitz, 1990).

Microfinance programs have emerged as a potential solution, providing small loans to the impoverished. While group lending, where borrowers share responsibility, has been theoretically lauded for addressing information asymmetries through peer monitoring, the increasing shift toward individual lending suggests its limitations (Hermes and Mehrteab, 2007). Additionally, many group lending models incorporate formal monitoring mechanisms.

The Vietnam Bank for Social Policy (VBSP) is a specialized bank in Vietnam dedicated to improving the socioeconomic conditions of the poor and near-poor. Its primary operation involves providing loans through a group lending program. Given the program's structure and the importance of group dynamics as highlighted by Werner (1995) and Sharma and Zeller (1995), the VBSP offers a valuable opportunity to study group lending.

This study aims to investigate how monitoring activities and social ties of group leaders influence loan defaults in the VBSP's group lending program. By examining these factors, the study contributes to the broader understanding of the delegated roles of group leaders in mitigating moral hazard within groups and provides empirical evidence for potential policy implications.

LITERATURE REVIEW

Theoretical models primarily emphasize the role of joint liability lending in addressing information asymmetries within financial markets. Specifically, joint liability has been demonstrated to mitigate moral hazard (Stiglitz, 1990; Varian, 1990; Banerjee, Besley and Guinnane, 1994), adverse selection (Ghatak, 2000; Gangopadhyay, Ghatak, and Lensink, 2005, Van Tassel, 1999), and strategic default (Besley and Coate, 1995; Armendariz de Aghion, 1999) in contexts where borrowers lack collateral. However, recent research posits that joint liability is not the sole determinant of microfinance success in overcoming information challenges. Other mechanisms, such as dynamic incentives, are equally crucial (Armendariz de Aghion and Morduch, 2000, 2005). The importance of dynamic incentives has been highlighted by studies demonstrating the potential for severe under-monitoring in peer monitoring systems without supplementary measures (Chowdhury, 2005). Consequently, there is a growing demand for further theoretical exploration of optimal monitoring strategies within underdeveloped credit markets.

Empirical research on joint liability lending is limited. Early studies, such as Werner (1995) on Costa Rican groups and Sharma and Zeller (1995) on Bangladeshi groups, examined factors influencing loan delinquency. Werner (1995) found that frequent staff visits increased internal delinquency, while formal screening reduced it. Sharma and Zeller (1995) linked loan size, family ties within groups, and credit rationing to higher delinquency rates.

Research on microfinance repayment has yielded mixed results. Matin (1997) found that education and land use were associated with timely loan repayment in Bangladesh, while factors like Membership duration and alternative credit sources were linked to delinquency. Zeller (1998) in Madagascar and Wydick (1999) in Guatemala explored group-based lending, finding varying impacts of group size, social ties, and other factors on repayment rates. Karlan (2001) in Peru supported some of Wydick's findings, linking geographical and cultural factors to delinquency.

Hermes, Lensink, and Mehrteab (2007) studied groups in Eritrea to understand factors affecting loan repayment. They found that group leaders who had access to future loans and knew information about other group members were more likely to lead groups with good repayment records. Eijkel et al. (2012) also focused on group leaders in Eritrea. They discovered that individuals more likely to become group leaders were often male, well-educated, and Muslim. These group leaders also had better chances of getting future loans.

Research on joint liability in microfinance highlights its potential to mitigate risks for both lenders and borrowers. While joint liability can reduce platform risk through self-selection and peer monitoring (Pratiwi, 2023), it also increases individual farmer risk. Studies demonstrate the importance of group dynamics, with factors like social cohesion and group size influencing repayment (Sahan and Phimister, 2023). Moreover, transitioning from individual to joint liability lending can improve repayment behavior, likely due to strengthened social ties within groups (Mahmud, 2020).

Research on joint liability lending in microfinance demonstrates its effectiveness in mitigating information asymmetries and improving repayment rates. While early studies primarily focused on the role of joint liability, recent research highlights the importance of additional factors such as group dynamics, monitoring, and loan program design. Overall, the success of joint liability lending programs depends on a complex

interplay of factors beyond the mere formation of groups. Understanding these dynamics is essential for designing effective microfinance interventions. Future research should explore the interaction of these factors in different contexts and the role of technology in enhancing program performance.

ESTIMATION MODEL

Unlike most other studies that rely on information from a single group member, Hermes, Lensink, and Mehrteab (2007) collected data from multiple members within each group. This study aims to analyze deeper the effects of monitoring, and social ties, group leaders on repayment performance. Particularly, we investigate the impacts of monitoring and social ties of the group leaders on loan defaults of the group as a whole; of ordinary members, and of the group leaders. The empirical model applied in this study is as followed:

$$Def_i = \alpha + \beta LSM_i + \delta Group_i + \mu$$

Whereas,

$DefD_i$ is a vector of dependent variables; $DefD_1$ indicates whether any group member defaulted on a loan; $DefD_2$ denotes default among non-leader members, and $DefD_3$ signifies the group leader's default status. A Probit model is used to assess the impact of independent variables on repayment performance.

LSM_i a vector of proxy variables representing monitoring, and social ties of group leader;

$Control_i$ is vector of control variables representing characteristics of the group.

Table 1. Variable measurement

Variable	Explanation
Dependent variables	
DefD$_1$	=1 if at least one member of a group indicated that he/she has had repayment problems
DefD$_2$	=1 if at least one member of a group other than group leader indicated that he/she has had repayment problems
DefD$_3$	= 1 if group leader indicated that he/she has had repayment problems
Independent variables	
Group leader variables	
LYrs	number of years that the leader leading the group
LAge	Age of group leader
LEdu	number of years of schooling
LPlaceD	Dummy=1 if group leader was born in the survey area
LAvgDist	Average distance in meters between the group leader and other members of the group

LOthFinD	Dummy=1 if group leader has accessed to other financial sources
LVisitD	Dummy=1 if group leader has regularly monitored (at least once a month) other group members by visiting the members
LCandInfoD	Dummy=1 if group leader has known about a new member before joining the group
Control variables	
GRelD	Dummy=1 if group leader knows there is at least one group member has relative(s) in the same group
GMisUse	Dummy=1 if group member misuse the loan
DisMarket	Distance in meters from house of group member/leader to nearest market
GSize	number of members in a group
GVoteD	Dummy=1 if group members has had a right to vote for selecting new member
GRegD	Dummy=1 if group has a written regulation

Source: the authors

DATA COLLECTION

A survey of 675 members from 225 lending groups was conducted in Septemember 2022 across five provinces in the Mekong Delta. The interviewees were clients of the Vietnamese Bank for Social Policy (VBSP). Each group consisted of three individuals: two regular members and one group leader.

Overall, approximately 66.7% of groups experienced loan defaults, with a default rate of around 64% among ordinary members. Nearly 20% of group leaders faced repayment difficulties. Group leaders were slightly older than 52 years old, with leadership tenures ranging from less than 3 years to 24 years. In terms of education, some group leaders have graduated university, and none of them was illiteracy.

Table 2. Descriptive statistic

Variable	Mean	Std. Dev.	Min	Max
Dependent variables				
$DefD_1$	.667	.472	0	1
$DefD_2$	.64	.48	0	1
$DefD_3$	.196	.397	0	1
Independent variables				
Monitoring variables				
LYrs	10.018	3.675	3	24

LVisitD	.458	.499	0	1
LCandInfoD	.483	.500	0	1
GMisUse	.498	.5	0	1
GSize	45.756	9.621	23	60
Social ties variables				
LPlaceD	.849	.358	0	1
LAvgDist	872.800	647.895	125	4505
Control variables				
LSexD	.751	.433	0	1
LAge	52.013	10.676	27	80
LEdu	8.231	2.871	3	16
GRelD	0.432692	0.496245	0	1
LOthFinD	.267	.443	0	1
DisMarket	2355.841	2475.988	3	14000
DisBank	8125.852	5764.225	200	28000
GVoteD	.526	.5	0	1
GRegD	.305	.461	0	1

Source: the authors

Geographic distances between group members and between members and their leaders were similar. Access to alternative financial sources was also comparable across members and leaders. Surprisingly, less than a half of the leaders visited members less frequently. However, leaders exhibited better knowledge of new potential members. Approximately half of the groups included relatives and reported loan misuse by members. Distances to main roads, and markets were considerable (over seven kilometers on average). Group sizes were notably large compared to other microfinance programs, averaging 45.8 members, and only half of the groups involved members in voting new members. Formal group regulations were uncommon. Most groups (65.38%) lacked written regulations. Notably, 23.08% of respondents accessed credit from other sources

EMPIRICAL RESULTS

As previously proposed, this section employs a Probit regression model to analyze the impact of monitoring activities and social ties of the group leaders on repayment rates. The results are presented in the following table.

Table 2. Estimation results

	(1)	(2)	(3)
	DefD_1	DefD_2	DefD_3
Monitoring variables			
LYrs	0.0780***	0.0861***	-0.0430
	(4.12)	(3.85)	(-0.95)
LVisitD	0.718***	0.767***	-0.140
	(4.84)	(4.54)	(-0.49)
LCandInfoD	0.217	0.0247	-0.0259
	(1.21)	(0.13)	(-0.04)
GMisUseD	0.744***	0.351**	0.120
	(5.10)	(2.25)	(0.44)
GSize	-0.0830***	-0.0538***	-0.0797***
	(-9.98)	(-6.47)	(-5.06)
Social ties variables			
LPlaceD	-0.893***	-0.574***	-0.366
	(-4.09)	(-2.64)	(-1.03)
LAvgDist	0.000323***	0.000320**	-0.0000553
	(2.68)	(2.35)	(-0.31)
Control variables			
LSexD	-0.727***	-0.820***	0.307
	(-4.33)	(-4.22)	(0.87)
LAge	-0.00274	0.00298	-0.0198
	(-0.43)	(0.42)	(-1.50)
LEdu	-0.0839***	-0.0760***	-0.166***
	(-3.33)	(-2.78)	(-2.75)

LOthFinD	0.0899	0.395**	0.716**
	(0.57)	(2.22)	(2.42)
DistMkt	0.000179***	0.0000444	0.0000184
	(4.73)	(1.33)	(0.37)
GVoteD	-0.271	-0.441**	0.0215
	(-1.44)	(-2.21)	(0.04)
GRegD	0.134	0.668***	-1.042***
	(0.94)	(3.48)	(-3.38)
constant	4.355***	2.564***	5.797***
	(6.12)	(3.40)	(4.08)
N	648	450	198
pseudo R^2	0.325	0.252	0.347
*Note: *, **, *** denote statistical significance at the 10%, 5% and 1% level, respectively.*			

In our study, we present the results from three models (as summarized in Table 2), focusing on the loan default behavior within microfinance groups. Specifically, we examine the effects on three categories: (1) all members' loan defaults, (2) ordinary members' loan defaults, and (3) group leaders' loan defaults.

Our findings provide compelling evidence that both monitoring practices and the social ties of group leaders significantly influence the likelihood of loan defaults within the entire group and among ordinary members. Notably, the workload of group leaders, as reflected by group size (GSize), negatively correlates with loan defaults across all three models at the 1% level of significance. Essentially, when group leaders have a manageable workload, the risk of loan defaults decreases. This suggests that the commissions received by group leaders play a pivotal role in their effectiveness.

Surprisingly, two variables-LYrs (longevity of the group leader's service) and LVisitD (frequency of group leader visits to members)-show unexpected negative signs at the 1% significance level. Let us unpack this: the long-serving group leader's familiarity with group members might inadvertently reduce the impact of debt collection pressure. Their deep understanding of individual circumstances could lead to a more lenient approach. Frequent visits by the group leader to individual members may serve dual purposes. While they could detect issues related to improper fund use or repayment difficulties, they might also inadvertently signal leniency, resulting in higher loan defaults. Misused loans (diverted from their intended purpose) tend to correlate with higher default rates.

Regarding social ties variables, group leaders born in the survey area (LPlaceD) exhibit better management skills. Their local knowledge and understanding of community dynamics contribute to effective group leadership. Interestingly, coefficients of the average distance between group leaders' residences and those of group members (LAvgDist) have mixed impacts on loan defaults. Further proximity seems to correlate with

higher default rates of the whole group or ordinary members as other studies (Karlan, 2004; Wydick, 1999). However, the sign of coefficient in model three is unexpected.

Regarding control variables, education levels of group leaders (LEdu) emerge as a strong predictor across all three models. Leaders with higher education tend to be more effective in monitoring and adhering to regulations.

Male group leaders (LSexD) manage group better than female counterparts in model 1 and 2 at the 1% levels. Meanwhile this variable is insignificant in model three indicating that male or female group leaders indifferently repaid their loans.

Leaders who accessing to other credit sources simultaneously with loan from the program (LOthFinD) variables positive coefficients in model 2 and 3 at 5% levels. It demonstrate that as the group leaders accessing to other credit sources may undervalue the importance of the loans from the program.

The Mekong River Delta is a distinctive region characterized by a network of winding channels and rivers, but it faces relatively poor infrastructure-especially when it comes to rural roads. As a consequence, the distance from the market (DisMarket) poses challenges for selling agricultural products, potentially leading to downward pressure on prices. This remoteness from the market has contributed to an increase in loan default rates for the group.

In Model 2, voting rights (GVoteD) for selecting new members have a positive impact on repayment performance at the 5% level. This suggests that when group members have the right to choose new members, the likelihood of default among ordinary members decreases.

Another significant variable is the provision of written regulations (GRegD) to group members. In both Model 2 and Model 3, this variable shows strong statistical significance at the 1% levels. However, the coefficients yield mixed results. On one hand, when written regulations are provided, group leaders appear to exhibit better regulatory compliance. On the other hand, in cases of loan misuse detection, group leaders use these written regulations to warn each member to adhere to the established rules.

CONCLUSIONS

This study examined the intricate relationship between social ties, monitoring, and loan defaults within the context of VBSP's group lending program in Vietnam's Mekong Delta. The delegated monitoring by the group leaders exhibited mixed results. While group size, indicating the monitoring intensity of the group leaders, and group misused loans show expected effects on loan defaults, LYrs and LVisitD show unexpected correlations with loan defaults.

Counterintuitively, stronger social bonds between the group leaders and members were associated with lower default rates. This finding provides additional evidence that social cohesion inherently enhances repayment performance in group lending programs.

To optimize program outcomes, VBSP may maintain large groups to stimulate the monitoring efforts of the group leaders. These leaders should have strong social ties in the area. However, the bank may consider replacing leaders who have served for long periods.

Furthermore, the government should invest more in infrastructure in the region, particularly in the construction of rural road systems to facilitate the transfer of agricultural products.

REFERENCES

1. Armendariz de Aghion, B. (1999). "On the design of a credit agreement with peer monitoring", *Journal of Development Economics*, 60, p. 79-104.
2. Armendariz de Aghion, B. and Morduch, J. (2000). "Microfinance beyond group lending", *The Economics of Transition*, 8, p. 401-420.
3. Armendariz de Aghion, B. and Morduch, J. (2005). *The economics of microfinance*, The MIT Press, Cambridge, Massachusetts.
4. Banerjee, A., Besley, T., and Guinnane, T. (1994). "Thy neighbor's keeper: the design of a credit cooperative with theory and a test", *Quarterly Journal of Economics*, 109, 2, p. 491-515.
5. Besley, T. and Coate, S. (1995). "Group lending, repayment incentives and social collateral", *Journal of Development Economics*, 46, p. 1-18.
6. Chowdury, P.R. (2005). "Group-lending: Sequential financing, lender monitoring and joint liability", *Journal of Development Economics*, 77, p. 415-439.
7. Eijkel, R., Hermes, N., Lensink, R. (2012). "Group lending and the role of the group leader", *Small Business Economics,* 36, p. 299-321.
8. Gangopadhyay, S., Ghatak, M., and Lensink, R. (2005). "On Joint Liability and the Peer Selection Effect", *The Economic Journal*, 115, p.1012-1020.
9. Ghatak, M. (2000). "Screening by the company you keep: Joint liability lending and the peer selection effect", *The Economic Journal*, 110, p. 601-631.
10. Ghatak, M. and Guinnane, T.W. (1999). "The economics of lending with joint liability: theory and practice", *Journal of Development Economics*, 60, p.195-228.
11. Hermes, Lensink and Habteab T. Mehrteab (2005). "Peer Monitoring, Social Ties and Moral Hazard in Group Lending Programmes: Evidence from Eritrea", *World Development*, 33, 1, 2005, p. 149-169.
12. Hermes, Lensink and Habteab T. Mehrteab (2007). "Does the Group Leader Matter: The Impact of Monitoring Activities and Social Ties of Group Leaders on the Repayment Performance of Group-based Lending in Eritrea", *African Development Review*, 18, 1, 2006, p. 72-97.
13. Karlan, D. (2001). "Social capital and group banking", Working paper, *MIT Department of Economics*.
14. Mahmud, Mahreen (2020). "Repaying microcredit loans: A natural experiment on liability structure." *The Journal of Development Studies*56(6), p. 1161-1176.
15. Matin, I. (1997). "Repayment performance of Grameen Bank borrowers: the unzipped state", *Savings and Development,* 21, No. 4, p. 451-473
16. Mehrteab,H. (2007). *Adverse selection and moral hazard in group-based lending*, Center for Development Studies, University of Groningen
17. Ngân hàng chính sách xã hội Việt Nam (2003). *Quyết định 783/QĐ-HĐQT*, Ngân hàng chính sách xã hội Việt Nam
18. Pratiwi, Putu Yani (2023). "The impact of joint liability group lending on lowering the risk of farmer and agriculture crowdfunding in Indonesia." *International Journal of Rural Management*19(1), p. 130-148.
19. Sahan, Selay, and Euan Phimister (2023). "Repayment performance of joint-liability microcredits: Metropolitan evidence on social capital and group names." *Bulletin of Economic Research*75(2), p. 287-311.
20. Sharma, M., Zeller, M. (1997). "Repayment performance in group-based credit programs in Bangladesh: an empirical analysis", *World Development* 25 (10), p. 1731-1742
21. Stiglitz, Joseph E. (1990). "Peer monitoring and credit markets." *The world bank economic review* 4(3), p. 351-366
22. Stiglitz, Joseph E., and Andrew Weiss (1981). "Credit rationing in markets with imperfect information." *The American economic review*71(3), p. 393-410
23. Van Tassel, E. (1999). "Group lending under asymmetric information", *Journal of Development Economics*, 60, p. 3-25

24. Varian, H. (1990). "Monitoring agents with other agents", *Journal of Institutional and Theoretical Economics*, 146, 2, p. 153-74.

25. Wenner, M. (1995). "Group credit: a means to improve information transfer and loan repayment peformance", *Journal of Development Studies* 32 (2), p. 263-281

26. Wydick, (1999). "Can social cohesion be harnessed to repair market failures? Evidence from group-based lending in Guatemala", *Economic Journal,* 109, p. 463-475.

27. Zeller, M. (1998). "Determinants of repayment performance in credit groups: the role of program design, intragroup risk pooling and social cohesion", *Economic Development and Cultural Change* 6 (3), p. 559-620