National Journal of Advanced Research
www.multidisciplinaryarticle.in
ISSN: 2455-216X
Received: 02-11-2023, Accepted: 18-11-2023, Published: 04-12-2023
Volume 9, Issue 2, 2023, Page No. 16-21

A review of the significance of joint liability lending: Its advantages and disadvantages

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Abstract
Joint liability contracts in the credit market have received a lot of attention in recent years. In this mechanism, borrowers have to help repay the debt of any one of them who does not pay fully. Individual lending mechanism suffers from several drawbacks like adverse selection, moral hazard, costly verification, difficulty in enforcement etc. Economists have proposed several theories of joint liability lending to analyze the role of this mechanism in overcoming these difficulties. Institutions that rely on joint liability to facilitate lending to the poor have a long history throughout the world. This paper intends to investigate the advantages and disadvantages of joint lending, the phases of the scheme and the role of joint liability lending in improving the repayment performance of the borrowers.

Keywords: Joint liability, self help group, Joint liability group, adverse selection, moral hazard

Introduction

The banking sector acts as one of the pillars of the economic system. The basic functions of financial institutions are accepting savings and providing credit to the clients. Formal banking institutions generally are not intended to provide credit to the poor due to their inability to arrange collateral. Poor have greater credit needs. Several ways out of this problem were suggested by economists, in which group based lending mechanism based on joint liability is one of them.

Informal moneylenders occupy a very important role in the credit market in developing countries. These moneylenders charge huge interest rates from the borrowers. Not only this, they get inadequate credit even at a high rate of interest. One of the problems of formal banking with the poor is the existence of high transaction costs. Typically, there are two methods employed to address the issue.

One approach is to provide subsidized credit to the poor to allow them to raise their income by investing in productive activities. But such programmes have two types of problems. One is the chance of capturing the benefit of the programme by wealthier people and another is the high delinquency by clients. Integrated Rural Development Programme (IRDP) in India was a big failure of this type of approach. Data on IRDP shows that 15 to 26 per cent of the clients were ineligible beneficiaries and the rate of repayment was 41 per cent (Pully, 1989) [22].

Another approach is the emergence of a group-based lending programme like Grameen Bank of Bangladesh introduced by Dr. Md. Yunus. Under this model, a financial institution lends to borrowers without collateral on the condition that they organize themselves into a self-selected group of five individuals, but the group as a whole is jointly liable for each loan given to any individual in the group (Rathore, 2017) [23].

The present study reviews the existing theoretical empirical literature on the problems of formal credit lending mechanisms vis-a-vis the role of joint liability mechanisms in overcoming these problems.

Difficulties of Individual Lending

The conventional system of lending is based on the credit history of individual loan seekers. This type of method requires providing the asset rights of individuals to the lender as collateral (Kumar, 2013) [14]. However, this process of collateralized credit delivery has resulted in the inaccessibility of loan services to the marginal section of society (Armendariz de Aghion and Morduch, 2000) [4]. Major problems of conventional credit delivery mechanism are-

1. Adverse Selection: Adverse selection occurs when lenders do not know particular characteristics of borrowers, for example, a lender may be uncertain about a borrower’s performance for undertaking risky projects. One implication is that lenders may consequently reduce the amount that they decide to lend, resulting in too little investment in the economy (Besley, 1994) [6]. A formal credit institution has a difficult time distinguishing between inherently risky and safe borrowers in its pool of loan applicants (Mukherjee, 2019) [20]. Stiglitz and Weiss (1981) [26] have discussed that when banks are imperfectly informed about the riskiness of the borrowers, they are not able to differentiate between risky and safe borrowers, and interest rates become extremely high. This forces the worthy borrower out of the market and they are not able to take advantage of profitable investment opportunities (Rathore, 2017) [23].

2. Ex-anti Moral Hazard: This problem emerges under the individual liability scheme when, after having extended a loan, the financial institution cannot monitor the borrowers and the borrower may be tempted to undertake riskier projects than the bank would like.

Moral hazard is a problem that can arise when lenders are unable to discern borrower’s actions. The main concern for the lender is that those who are in debt may become less motivated in their efforts to make the project successful or they might change the type of project that they undertook initially. (Besley, 1994) [6].

3. Ex-post Moral Hazard: This problem emerges once project returns have been realized. When the financial institution cannot observe such returns, the borrowers, who are protected by limited liability, have the initiative to pretend that their returns are low, i.e., to strategically default on their debt obligations (Mukherjee, 2019) [20].

4. Costly Verification: For rural financial markets of developing countries, lack of expertise in project appraisal and the costs of monitoring and assessment relative to the size of a loan may mean that people are exhausted from the credit market, even though they have projects that would survive a profitability test based on complete information (Besley, 1994) [6]. Braverman and Guasch (1989) [8] suggest that the cost of processing small loans can range between 15 to 40 percent of the loan size.

5. Difficulty in Enforcement: The issue with limited enforcement isn't caused by information asymmetry; rather, it stems from the lender's limited ability to impose sanctions against a delinquent in the absence of collateral. If the legal system is weak and the amount of effective sanctions by the lenders, borrowers may deliberately decide not to repay the loan even if they are in a position to do so (Rathore, 2017) [23].

Joint Liability Lending

Matin (1997) described joint liability as a contract in which the provision of the private good, such as individual access to credit, is made conditional on the provision of the public good, such as group repayment. It refers to a situation wherein two or more people are responsible for repaying a debt or obligation, and a creditor may get payment from them separately or jointly (Simtowe, Zeller and Phiri, 2006) [25]. Under joint liability, a small entrepreneur forms a group with other small entrepreneurs and collectively applies for a loan. If the loan application is accepted, each individual individually receives a loan, but the entire group remains jointly responsible for loan requirements. Therefore, in the event that a borrower misses a payment, the other group members must make up the difference on the defaulting borrower's behalf. Otherwise, the entire group loses access to further credit from the lending institution (Chakravarty and Shahriar, 2015) [10]. The idea behind joint liability group lending is that other borrowers in the group will repay the debt if one borrower is unable to do so. (Ahlin and Towsend, 2007) [1].

Joint Liability as an Efficient Instrument to avoid difficulties associated with Individual Liability

Several academic papers have identified the advantages of joint liability throughout the world. These advantages are discussed in the light of various difficulties discussed above.

1. Adverse Selection: Bank can impose a high interest rate with no or less collateral or a low interest rate with collateral. Risky borrowers will choose the first option. But if the borrowers are poor then they will not be able to provide useful collateral. That's why lenders do not have any effective way to separate good risk from bad. However, under joint liability, the safe borrower would like to choose a safe borrower/ partner (Ghatak and Guinnane, 1999) [11]. One advantage of the group lending principle is that it can put local information to work for the outside lender. Adverse selection is mitigated under group lending (Mukherjee, 2019) [20]. Self-selection group lending contracts address adverse selection by using local information networks to obtain information about borrowers that is comparable to direct collection. Joint liability with self-formed group members in a way that exploits this local information (Rathore, 2017) [23]. Armendariz and Gollier (2000) [3] and Van Tassel (1999) [28] showed that joint liability lending with self-selection can improve the pool of borrowers if borrowers have perfect knowledge of their partners. All borrowers prefer to have safe partners because of expected joint liability payments so do safer partners. They also observed that in equilibrium the borrowers will end up with partners of the same type. That is there will be positive associative matching in group formation with the same joint liability contract offered to all borrowers, safe borrowers face lower effective borrowing costs. A risky borrower gets a high expected borrowing cost as her partners are more likely to fail. With lower borrowing costs, safe borrowers are attracted back into the market. The improvement of the pool of borrowers will lead to a reduction in the equilibrium interest rate and an increase the average payment rate.

2. Moral Hazard: In the absence of collateral, the lender and borrower do not have the same objectives because the borrower does not fully internalize the cost of project failure. Moreover, the lender cannot perfectly how the borrower should run the project, in part, because some of the borrower's actions are costlessly observed.

Theories of peer monitoring are motivated by the fact that group members have an incentive to take remedial action against a partner who misuses her loan because of joint liability. With group lending, individual borrowers are made to bear liability for themselves and others in their group, but the savings in the form of better project choice allow the bank to pass on some benefits to the borrowers in the form of reduced interest rates. As a result, group lending raises welfare and rates of repayment. It has been observed that as long as social sanctions are effective enough or monitoring costs are low enough, joint liability lending will improve repayment through peer monitoring even when monitoring is costly. The gain to the borrowers is that even though such projects may yield on return on average, if successful, their returns from such projects can be very high (Mukherjee, 2019) [20]. Joint liability has the property to induce peer monitoring among group members, thereby transferring a part of costly monitoring efforts to the borrowers. The group members have an incentive to take corrective actions against a partner who misuses her loan. The group lending structure is more effective in monitoring because group members live close to each other, have social ties, and are better informed about each other activities than an outside lender. Thus, the repayment rate is higher under joint liability lending where borrowers choose projects cooperatively comparatively to individual lending (Rathore, 2017) [23]. Stiglitz (1990) [28], Varian (1990) [29] and Banerjee et. al. (1994) describes how joint liability transfer monitoring costs from the bank to the borrowers, providing banks with an effective way to overcome ex-ante moral hazard. Using the strategic default model, Armendariz de Aghion (1999) [2] shows how peer monitoring combined with a high likelihood of social sanctions lowers the occurrence of strategic default and improves the lender's

capacity to collect repayments. Simtowe, Zeller and Phiri (2006) [25] observed in Malawai that about 40 percent of the credit groups reported that they experienced either a misuse of funds or mismanagement of investment by some of their group members. They also revealed that the likelihood of occurrence of moral hazard is lower in groups that were endogenously formed through peer selection. Peer monitoring through rules that encourage joint enterprise ownership reduces the incidence of moral hazard.

3. Enforcement: The problem of enforcement arises from the lender's limited ability to apply sanctions against a delinquent borrower. Besley and Coate (1995) [7] showed that group lending has two opposing effects-

a. The advantage of groups is that they allow a member whose project yields high returns to pay off the loan of a payment whose project does very badly.
b. The disadvantage is that a moderately successful borrower may default on her repayment because of the burden of having to repay her partner's loan. However, if social ties among members are sufficiently strong, the net effect is positive because by defaulting a borrower incurs sanctions from both the bank and the community.

Wydick (1999) [30] shows that a sufficiently strong and credible threat of social sanctions against a defaulting group member can curtail moral hazard by borrowers. The empirical finding of Ziller (1998) from Madagascar that repayment rates were higher in groups homogeneous in demographic and social variables, also supports this view. Marr (2002) showed that peer pressure was very strong when peer monitoring was weak. This result was also found in the study of Yeboah and Abdulai (2012) [31]. Peer monitoring, peer pressure and threat of sanction are very important strategies for successful loan repayment in the absence of peer monitoring.

Recent research on group lending has argued that in the presence of imperfect information in the credit market, group lending may be able to allow for Pareto superior equilibrium credit market (Wydick, 1999) [30].

Phase of Joint Liability Scheme

Three major steps are involved in the process of issuance of loans in joint liability schemes having very distinct characteristics as compared to individual schemes. These phases are briefly discussed under

1. Screening and group formation: Screening is the initial process of loan processing. Members of a group are expected to know each other. Therefore if they are given the option to form a group on self-selection, they would take the opportunity. The group member's pressure would ensure better loan repayment. Allowing members to form groups on their own has some crucial advantages (Kumar, 2013) [14]. Lending agencies can utilize local information they have about each other's project attributes to choose the best partners (Ghatak, 2000; Armendariz de Aghion and Morduch, 2005). It also allows socio-economic homogeneity within a group, which ensures consensus in decision making within the group (Kumar, 2013) [14].

2. Monitoring: Peer monitoring is one of the ways lenders can use to reduce the risk of credit default. Monitoring each other reduces the possibility of potential loss of access to further loans for other members of the group (Sharma and Zeeler, 1997). Group members reside in the same location and are known to each other. This results in the possession of additional information about the lenders to the creditors. The additional information provides additional effectiveness in monitoring the borrowers (Kumar, 2013) [14].

3. Enforcement: The risk of loan default is a major problem in any credit delivery system. Social sanction and peer pressure help the creditor to recover the loan efficiently in a joint liability mechanism (Kumar, 2013) [14]. To pressurise loan users to repay loans different types of enforcement are used, like peer pressure and social sanctions etc. It was observed that the repayment rate can be improved if social enforcements are strong enough (Beslay and Coate, 1995). Peer pressure and social sanctions are used when group monitoring is relatively low (Marr, 2002).

Examples of Joint Liability

Three important examples of joint liability schemes are – (i) Credit Cooperative in Germany, (ii) Grameen Bank in Bangladesh and (iii) Self Help Group Bank Linkage Programme in India. The activities and decision makings of both institutions illustrate the basic the basic joint liability framework model. Borrower's self-selection into groups in which all members are liable for all other's loans. Underlining the entire group notation is the idea that these individuals, because of shared location and other ties, know a great deal about one another, can observe each other's day-to-day activities and the outcome of these activities, and have ways of pressuring each other to repay loans. Both institutions illustrate concretely the ways they used their structure to achieve screening, monitoring, audition and enforcement (Ghatak and Guinnane, 1999) [11].

1. Credit Cooperatives in Germany: Credit Cooperatives were first introduced in Germany during the 1850s. Most credit cooperatives were smaller than banks, had lesser staff and dealt with clients most banks would not accept as customers.

Advocates of German Cooperatives argued that the institutions prospered because they had an efficiency advantage rested on a combination of better information about borrowers and the ability to use sanctions not available to banks (Guinnane, 2001) [12]. These cooperatives are forerunners of lending schemes that rely on joint liability. The cooperatives tended to make long term loans and financed those loans from local deposits. Most loans are secured by a co-signer. The co-signer did not have to be a member of the cooperatives but was held responsible for any loan the borrower did not repay. In order to apply for a loan, a prospective borrower had to show up at the managing committee's monthly meeting and describe his needs regarding security, loan amount and terms, and intended use.

2. Grameen Bank in Bangladesh: Grameen Bank was established in 1983 as a specialised bank. The innovation that distinguished Grameen Bank from financial institutions is the use of a joint liability clause in the loan contract (Chakravorty and Shahriar, 2015) [10]. It is well known for its innovative banking for the rural poor, who are otherwise excluded from formal banking because they lack physical

collateral such as land or other immovable properties. Grameen Bank practices collateral-free lending, relying instead on peer monitoring and peer pressure to enforce loan contracts. Providing access to financial services to the poor, as Grameen Bank believes, would help the poor to be self-employed and generate income, thus freeing them from poverty (Khandker, 2015) [13].

3. Self Help Group Bank Linkage Programme in India
To integrate the underprivileged into the formal financial sector, the Government, banks, and the National Bank for Agriculture and Rural Development (NABARD) launched a number of initiatives. NABARD aims to facilitate sustained access to financial services to financial services for the unreached population in rural areas through various microfinance programmes. NABARD initiated the Self Help Group Bank Linkage programme, which is the largest microfinance programme in the world, today touches nearly eleven crore households through more than 134 lakh Self Help Groups (SHGs) with deposits of over Rs. 58,893 crore and annual credit disbursement of more than Rs. 1,45,200 crore. NABARD has also been supporting the formation of informal groups, Joint Liability Groups (JLGs) with four to ten members. JLGs are intended basically as credit groups for tenant farmers and small farmers who do not have the title of their farmland or security to offer but need long term credit and seasonal credit for pursuing their economic activities. NABARD supports banks in nurturing and financing of JLGs and has issued comprehensive guidelines on JLGs to banks (Mukherjee, 2019) [20]. Almost 70 lakh JLGs were promoted and credit linked during 2022-23. During the same period, credit flow to JLGs was Rs. 1,33,373 crore (NABARD, 2023).

Problems of Joint Liability
1. Social Acquaintance: One of the major issues regarding joint liability lending is the degree to which group members know each other and interact regularly (Ghatak and Guinnane, 1999) [11].

2. Social Ties: A major obstacle to joint liability as a lending mechanism arises when social ties among possible borrowers are too weak to support the feeling of group solidarity. Joint liability may not work if the individuals involved are unwilling, for whatever reason, to put pressure on delinquent borrowers and to sanction those who default. There are the possibilities of possible negative implications of peer pressure and other aspects of joint liability. Montgomery *et al*. (1996) [18] gave an example of Bangladesh Rural Advancement Committee (BRAC) group members taking aggressive action against defaulters. In some cases, the action took the form of seizing the individual's assets, such as livestock or household goods. In a case, one group of BRAC borrowers tore down a woman's house because she had not repaid her loan.

3. Dynamic Incentives: Most of the Joint Liability Lending Institutions (JLLIs) today are either NGOs or private institutions. Borrowers of MMF in Malawi were aware that this is a government programme which made at least some think that they would not be held to strike standards of repayment. There is a misunderstanding concerning the difference between a grant and a loan (Buekley, 1996). A similar instance took place in the same country in 1991-92 where many members of SACA borrowing clubs were granted a repayment moratorium following a draught that had devastated maize production. Sometimes, JLLIs adopt policies that undermine dynamic incentives. For example, if a programme's rule stipulates that a particular loan will be the last loan, regardless of how the borrower behaves with it, then the lender forsakes all benefits from dynamic incentives. Mosley and Dahal's study (1985) [19] of a programme in Nepal reports examples where some borrowers refuse to make their payment, even when able to do so. (iii) Competition among JLLIs: Competition among JLLIs leads them to undermine repayment incentives for each other borrowers. There are two different programmes in Malawi, SACA and Mudze Fund. Buckley (1996) [9] found that many borrowers who were participants in the Mudzi Fund had been dropped from earlier participants in the SACA programme for not repaying a loan. In Bangladesh, the Grameen Bank, BRAC and TRDEP operate in the same area.

4. Limited Liability: The problem from the lender's point of view is that the borrower wants to choose the risky project because the punishment for failure is limited by the available wealth. The incentive problem results in credit rationing. The lender offers a smaller loan than the borrower would like since a larger loan makes the risky project more attractive (Madajewicz, 2004) [15]. One of the problems with joint liability lending programme is that the poor are given access to credit without collateral and in the event of default, they cannot be punished beyond mere denial of further access to credit. This form of limited liability can induce borrowers to make risky decisions (Simtowe, Zeller and Phiri, 2006) [25].

5. Risky for Safe Borrowers: Joint liability has another effect. The liability imposes risk. If a borrower's project succeeds in a group, her payoff depends on her partner's income. If her partner's project succeeds, she obtains a higher payoff. Otherwise, she has to pay the liability. But in an individual contract, a borrower receives a higher pay off if her project succeeds, irrespective of other borrower's performance. The joint liability scheme also fails when group members find that other members are defaulting irrespective of monitoring (Kumar, 2013) [14].

Conclusion
Joint liability lending is celebrated as an innovation that has made previous insolvent individuals solvent by creating social collateral to replace the missing physical collateral that was excluded from access to the formal mode of the financial delivery mechanism. Due to a lack of collateral and asymmetric information poor borrowers find it difficult to get access to the formal credit market. Conventional credit delivery mechanism based on individual liability base on individual liability suffers from serious difficulties. These difficulties are adverse selection, ex-ante moral hazard, ex-post moral hazard, costly verification, difficulty of enforcement etc. Group lending based on joint liability mechanism is one of the solutions to overcome these problems. The principal advantage of joint liability lending is that it solves information asymmetries by shifting the burden from the lender to the borrowers resulting in lower transaction costs for the lending institutions. In this study, an attempt was made to review the existing theoretical and

empirical works related to the role of the joint liability mechanism in the group based lending programme for the poor. A large number of researches show that joint liability can achieve better screening to tackle the problem of adverse selection, encourage peer monitoring to reduce moral hazard, give group members incentives to enforce the repayment of loans and reduce the auditing cost of the lender. Group lending based on joint liability has become popular in many countries across the world. Grameen Bank in Bangladesh, German Cooperatives and SHG- Bank Linkage programme in India are among the popular credit lending programmes based on joint liability mechanism.

Despite all the advantages of joint liability lending, it suffers from some serious problems. It has been observed that in some cases group members take aggressive actions against defaulters. In some instances, borrowers have misunderstandings concerning the difference between a grant and a loan, which results in repayment default. In the joint liability scheme, where the actual punishment is nothing but denial of further access to credit, borrowers have an incentive to become defaulters. The most adverse effect of joint liability falls on the safe borrowers who despite repaying their loan have to bear the burden of the defaulter's obligations.

References

1. Ahlin C, Townsend RM. Using Repayment data to test across Models of Joint Liability Lending. Economic Journal,2007:117(517):11-51.
2. Armendariz de Aghion, B. On the Design of a Credit Agreement with Credit Monitoring. Journal of Development Economics,1999:60(1):79-104.
3. Armendariz de Aghion B, Gollier C. Peer Group formation in an Adverse Selection Model. Economic Journal,2000:110:632-643.
4. Armendariz de Aghion, B., and Morduch, J. Microfinance beyond Group Lending: economics of Transition,2000:8(2):401-420.
5. Banerjee AV, Besley T, Guinnane TW. The Neighbour's Keeper: The decision of a Credit Cooperative with Theory and Test. Quarterly Journal of Economics,1994:109(2):491-515.
6. Besley T. How do Market Failures Justify Interventions in Rural Credit Markets. The World Bank Research Review,1994:9(1):27-47.
7. Besley T, Coats S. Group Lending, Repayment incentive and Social Collateral. Journal of Development Economics,1995:9(3):115-127.
8. Braverman A, Guasch JL. International Analysis of Credit Co-operatives. In Bardhan, P. (ed.) The Economic Theory of Agrarian Institutions. Oxford University Press. Oxford. UK, 1989.
9. Buckley G. Rural and Agricultural Credit in Malawi: A Study of the Malawi Mudzi Fund and the Small Holder Agricultural Administration. In Finance Against Poverty, Vol II: Countries Case Studies. (ed.) Hulme, D., and Mosley, P. Routledge, London, 1996, 428-521.
10. Chakravarty S, Shahriar AZM. Selection of Borrowing Partners in Joint Liability- Based Microfinance: Evidence from Framed Field Experiments in Bangladesh. Entrepreneurship Theory and Practice,2015:39(1):129-144.
11. Ghatak M, Guinnane TW. The Economics of Lending with Joint Liability: Theory and Practice. Journal of Development Economics,1999:60:195-228.
12. Guinnane TW. Cooperative as Information Machines: German Rural Credit Cooperatives, 1883-1914. The Journal of Economic History,2001:61(2):366-389.
13. Khendkar SR. Grameen Bank: Impact, Cost and Programme Sustainability. Asian Economic Review, 2015:14(1):65-85.
14. Kumar VVP. Literature Review of Joint Liability, Individual Liability in Micro Finance Institute and Their Impact on Default Rate. International Journal of Information, Business and Management,2013:5(4):1-18.
15. Madajewicz M. Joint Liability Vs. Individual Liability in Credit Contract. Discussion Paper, No., Department of Economics, Colombia University, New York, 2004, 0304-18.
16. Marr A. Microfinance and Poverty Reduction: The Problematic Experience of Commercial Banks in Peru. School of Oriental and African Studies Working Paper 122, London, 2002.
17. Matin, I. Repayment Performance of Grameen Bank Borrowers: The Unzipped State. Saving and Development,1997:21(4):451-472.
18. Montgomery, R. Disciplining or Protecting the Poor? Avoiding the Social Cost of Peer Pressure in Micro-Credit Schemes. Journal of International Development, Special Issue, Sustainable Banking for the Poor,1996:8(2):289-305.
19. Mosley P, Dahal RP. Lending to the Poorest: Early lesions from the Small Farmer's Development Programme, Nepal. Development Policy Review,1985:3:193-207.
20. Mukherjee, S. Group Lending and Financial Inclusion: The Role of NABARD. International Journal of Social Science and Economics Research,2019:4(3):1992-2001.
21. NABARD. Status of Microfinance in India, 2022-23, National Bank for Agriculture and Rural Development, Mumbai, 2023.
22. Pulley R. Marketing the Poor Creditworthy: A Case Study of the Integrated Rural Development Programme in India. World Bank Discussion Paper 58, Washington DC, 1989.
23. Rathore BS. Joint Liability in a Classic Microfinance Contract: Review of Theory and Empirics. Studies in Economics and Finance,2017:34(2):213-227.
24. Sharma M, Zeeler M. Repayment performance in group-based credit programme in Bangladesh: An empirical analysis. World Development,1997:25(10):1731-1742.
25. Simtowe F, Zeller M, Phiri A. Determinants of Moral Hazard in Microfinance: Empirical Evidence for Joint Liability Lending Programmes in Malawi. African Review of Money, Finance and Banking, 2006, 5-38.
26. Stiglitz J, Weiss A. Credit Rationing in Markets with incomplete Information. American Economic Review,1981:71(3):393-410.
27. Stiglitz J. Peer Monitoring and Credit Market. World Bank Economic Review,1990:4(3):351-366.
28. Van Tassel E. Group Lending under Asymmetric Information. Journal of Development Economics,1990:60(1):3-25.
29. Varian H. Monitoring Agents with other Agents. Journal of Institutional and Theoretical Economics, 1990:146(2):153-174.

30. Wydick, B. Can Social Cohesion be harnessed to repair Market Failures? The Economic Journal,1999:109:463-475.
31. Yeboch EH, Abdulai A. Joint Liability Groups: Theory, Practice and Implications for Poverty. Journal of Poverty Alleviation and International Development,2012:3(1):97-123.
32. Zeeler M. Determinants of Repayment performance in Credit Groups: The role of Programme Decision, Inter-Group risk pooling and Social Cohesion. Economic Development and Cultural Change,1998:46(1):599-620.