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INCREASING SOLVENCY BY MODERATING SOCIAL CAPITAL: A STUDY ON GROUP LENDING MODEL FROM COMMUNITY EMPOWERMENT TRUST FUND – INDONESIA

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Abstract. The Community Empowerment Trust Fund is a revolving fund belonging to the community originating from the former Sub-District Development Program and the National Program for Independent Rural Community Empowerment in Indonesia which ended in 2014. Community institutions then manage the Community Empowerment Trust Fund to fund community economic activities in the form of group loans. The group lending model is a financial inclusion that reaches the poor who do not have collateral. These funds have been managed well with the group loan model. However, the success of managing these funds cannot be separated from the social capital built between group members and between the group and the fund management unit. This study aims to examine the management of the borrower group – group internal setting; group loan appraisal and group loan control – and social capital on repayment performance. The study results prove that group lending appraisal, group lending control, and social capital positively impact repayment capacity. The research finding is social capital strengthens group lending control dynamics to increase repayment capacity. Another finding explains that women's loan groups have a higher collectability rate in repayment of loans compared to productive economic business groups whose members are both male and female.

Keywords: group lending model, social capital, repayment capacity.

JEL Classification: G21, G51, J15, P43.

Introduction

The existence of microfinance is seen as capable of making exciting steps and breakthroughs in providing access to finance for low-income people, especially the poor and micro-entrepreneurs. This group is non-bankable in terms of providing access to financing when measured by the financial, technical requirements of the commercial bank. The purpose of microfinance has two views: first, the purpose of microfinance is based on economic interests aimed at low-income groups. The second view emphasizes that the purpose of microfinance has broader importance, namely for economic development. Microfinance is a practical approach to improving people's welfare by increasing the income of the poor through the availability of access to microfinance services (Robinson, 2002).

The Community Empowerment Trust Fund activity management unit is a form of the institutional form of managing revolving funds for the National Program for Independent Rural Community Empowerment which ended in 2014. The community empowerment trust fund management institution develops and manages a revolving fund that makes it easy for Poor Households to obtain capital or credit in the form of group loans. The group category consists of the Women's Savings and Loans Group (WSLG) and the Productive Economy Business Group (PEG). Credit management uses a group lending model approach with attractive provisions, including 1) No collateral, no administrative deductions; 2) Light services with group agreement; 3) The group received assistance and training. The success of the microfinance institution that manages the Community Empowerment Trust Fund (CETF) is determined by the process of developing the assisted group as a partner of the CETF management agency in running its business. Assisted groups as partners of the CETF management agency need an effective financing process to run their business businesses to develop. Women's Savings and Loans Group and Productive Economic Business Group are categories of Micro, Small,

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and Medium Enterprises whose existence is in dire need of loan funds as business capital through groups. This group of borrowers has proven to survive and continue to exist in a state of bad economic conditions due to the COVID-19 pandemic because this sector has high adaptability to unfavourable economic conditions.

The provision of unsecured group loans carries a considerable risk in repayment capacity. The phenomenon is that the average Non-performing Loan (NPL) of CETF management institutions during the 2020 COVID-19 pandemic in Sragen Regency is around 8.59 percent, which is greater than five percent following the NPL provisions from Bank Indonesia. The non-performing loan of the CETF management agency is related to the repayment capacity of the group of borrowers. The repayment capacity of borrower groups is highly dependent on the ability of group governance, including self-internal regulation and screening process for members to qualify for loans, controlling the level of arrears of loans from microfinance lending institutions. In the group lending model, borrowers are required to apply for credit in groups formed voluntarily because the borrowers know each other and understand the profile of each group member for shared responsibility and avoiding higher risks. Reviews of empirical research studies on repayment capacity in group loans include:

Table 1. Review-determinant of group lending model on repayment performance

Studies	Methods	Research area	Findings
(Sharma & Zeller, 1997)	Tobit Analysis	Determinant of group liability on repayment rates	Factors influencing repayment rates are group size, loan rationing rate, the mix of companies within the group, demographic characteristics, ties, and social status.
(Chowdhury, 2005)	Game modeling	Group Lending	Group lending schemes should involve sequential financing or a combination of lender monitoring and co-liability. Shared responsibility will ensure the viability of the group loan scheme if there is intensive supervision.
(Ben Soltane, 2008)	Logit Model	Group repayment performance	Internal rules of behavior, ordinary business, knowledge of other members of the group before its formation, peer pressure, self-selection, gender, education, and non-financial services have a positive effect on repayment. Meanwhile, homogeneity and marital status are the main factors that have a negative effect on repayment.
(Al-Azzam et al., 2012)	Survey/ Jordanian	Borrower group payment behavior	Peer monitoring, group pressure, and social bonds reduce defaults.
(Zhang & Izumida, 2013)	Logit model	Determinants of repayment performance of group lending	Rural China has a severe mismatch between shared responsibility mechanisms and social and economic conditions. Debtor characteristics such as higher household income do not improve payment performance. However, factors such as higher levels of acquaintances within a group, migrant income, and employment in government agencies positively increase the chances of repayment.
(Dorfleitner & Oswald, 2016)	Binary Regression		The term of the loan and the length of the grace period affect the possibility of default.
(Jumpah et al., 2018)	Logistic Regression	Determinants of repayment rates for smallholder borrower groups	Debtor characteristics such as age, gender, income, and the number of dependents increase the possibility of repayment. However, membership of farmer-based organizations, experience, interest rates, and the term or duration of loan repayments have a negative effect on loan repayment.

End of Table 1

Table 1 shows the results of a review of several empirical studies on the factors that affect the ability to pay in a group loan model that gives different results. Based on the research gap and existing business phenomena, the problem with the group lending model research at a community empowerment trust fund management institution is how community-based loan groups can encourage the repayment capacity of the poor. Community empowerment trust fund management institutions provide trust and the flexibility to develop with their abilities to the borrowing group. Empowerment, partnership, and assistance to the group of borrowers is a social capital that is expected to encourage the group to avoid default. This is in line with Putnam's theory of social capital. In his book Making Democracy Work: Civic Traditions in Modern Italy (1993, p. 36), Putnam defines social capital as "features of social organization, such as networks, norms, and trust, that facilitate coordination and co-operation for mutual benefit," characteristics of social organization, such as networks, norms, and trust that facilitate coordination and cooperation for mutual benefit.

Discourse in institutional economics has paid attention to why group-based institutions perform well while others fail. The idea of a group-based lending model stems from the failure of market institutions to provide financial services to the poor. Group-based lending models by non-market institutions, interpersonal relationships, and cooperation among group members can be social collateral that replaces the powerlessness of the poor to provide physical collateral. This substitute collateral increases the guarantee of group members' loan repayment capacity through peer monitoring and sanctions functions. The success of group-based lending models, such as the Grameen Bank, has increased the poor's access to unsecured loans (Hasan & Renteria-Guerrero, 1997).

Several previous studies that provide evidence that social capital had a positive effect on repayment include (van Bastelaer & Leathers, 2006; Zeller, 1998; Cassar et al., 2007). In addition, research on the role of social capital in the group lending model includes (Brown et al., 2011; Al-Azzam et al., 2012; Sanrego & Antonio, 2015; Okello Candiya Bongomin et al., 2017; Zhang et al., 2020). Okello Candiya Bongomin et al. (2017) examined the mediating role of social networks in the relationship between financial intermediation and financial inclusion of poor households in rural Uganda. The findings of this study reveal that social networks partially mediate the relationship between financial intermediation and financial inclusion of poor households in rural Uganda. In addition, social networks and financial intermediation have a significant and positive impact on the financial inclusion of poor households in rural Uganda. This implies some effects of financial intermediation on financial inclusion through social networks that impact the financial inclusion of poor households.

This study aims to examine the existence of social capital in encouraging the determinants of repayment capacity in the group lending model based on community empowerment. The novelty of this research is to use social capital as a reinforcing factor that determines repayment capacity. This study includes the category of borrower group consisting of women's savings and loan groups and productive economic business groups as dummy variables. The female group exhibits better repayment behavior (Dorfleitner & Oswald, 2016; Jumpah et al., 2018).

1. Literature review and hypotheses

1.1. Repayment capacity on group lending model

The elements contained in the provision of credit are: (1) Trust, trust is a belief of the creditor that the credit given in the form of money, goods, or services will be received back at a certain period in the future; (2) Agreement. Besides the element of trust in the credit, it also contains a piece of the agreement between the creditor and the credit recipient. This agreement is stated in an agreement where each party signs its rights and obligations; (3) Term. Each loan granted has a certain period; this includes the agreed repayment period. This period can be in the form of short or medium and long term. (4) Risk. The existence of a grace period for the return will cause a risk of uncollectible/jammed lending. The longer the term of credit, the greater the risk of being uncollected. (5) Repayment. It is an advantage or granting of credit or better known as interest. Compensation in interest and credit administration fees is advantageous for financial institutions (Kasmir, 2015).

Microfinance institutions provide microcredit to unbanked borrowers and require no collateral. On the other hand, group lending is an innovation that allows poor borrowers to act as collateral for one another through shared responsibilities. Shared responsibility can achieve better screening for adverse selection, encourage peer monitoring to reduce moral hazard, provide incentives to group members to enforce loan repayments. In addition, by leveraging the local knowledge that members have with each other, group lending solves some of the problems of information asymmetry between borrowers and creditors (Ghatak & Guinnane, 1999).

The theory underlying microfinance and group lending by works Stiglitz (1990) and Varian (1990), analyse how shared obligations can influence borrowers in groups to screen their capacity and monitor their joint efforts, to reduce the moral hazard problems involved in loans to the unsecured, and to encourage borrowers to encourage partners to choose safer projects. The basic philosophy of the group lending model lies in the fact that deficiencies and weaknesses at the individual level are overcome by the collective responsibility and security afforded by the formation of such groups of individuals. The communal togetherness of individual members is used for several purposes: educating and building awareness, collective bargaining power, peer pressure, etc. The group lending model is closely related and has inspired many other lending models. These include Grameen, community banking, village banking, self-help, solidarity, peer pressure, etc. One example of the group model is a joint liability. When a group takes out a loan, they are jointly responsible for repaying it when one group member defaults (Srinivas, 2015).

The most important element of a group-based lending system is a joint liability and the extent to which the lender interacts with the group as a whole or even with individual members. Experience has shown that factors that promote group formation and group involvement in joint activities – other than credit – can affect group performance. In addition, a strong social network and intensive interaction can facilitate the collection of information about the reliability of agents or members and build mutual trust and confidence. A strong network can stem from repeated transactions (interactions), generating incentives for agents or members to behave honestly. They consider the norms of reciprocity and loyalty that underlie the transaction to build reputation and credibility.

Group lending programs use a collective obligation to leverage borrowers' local information about their respective projects through the self-selecting of group members in the group formation stage (Ghatak, 1999). According to Zeller (1998), each group member is responsible for repaying the other members' loans, and any other credits are disbursed after all group members have paid their loans in full. This helps ensure members pay and monitor individual borrowers' efforts to repay loans. According to Conning and Udry (2005), group lending is an innovation that allows the poor to borrow because it replaces physical collateral used by commercial banks with social collateral. In group-based lending programs, the functions of screening, monitoring, and guaranteeing loan payments are primarily transferred from the bank agent to the borrower or the group members themselves. Stiglitz (1990) and Varian (1990) discuss the perceived benefits of collective action in screening potential borrowers and monitoring borrowers. Incentives for screening and monitoring the actions of fellow group members arising from the existence of a system of joint responsibility for the potential loss of opportunities to gain access to future loans.

Sharma and Zeller (1997) and Zeller (1998) investigated the effect of program design, community and group characteristics on group repayment performance. Analysis of the determinants of loan repayment rates shows that groups with higher levels of social cohesion have better rates of return. Moreover, the results conclude that it is not the level of physical and human assets of group members but the level of variance of risk assets among members that contributes to better loan repayments. The results, therefore, suggest that heterogeneity in asset holdings among members, and the associated intragroup diversification across firms on and off the farm, allows members to pool risks to better secure loan repayments.

Their article shows Feder and Huppi (1990) that successful group loan schemes work well with homogeneous groups and are jointly responsible for the default. The practice of denying credit to all group members in the event of a default is the most effective and cheapest way to enforce shared responsibility. According to Brandt et al. (1998) in the "Lending Methodology Module", those borrower groups have an essential role in lending procedures where group lending programs disburse loans through groups. In this case, group members guarantee the repayment of their respective loans. Collaterals and co-signers are generally not used, but there is peer group pressure and collective responsibility for loan repayment within the group. In addition, the functions normally performed by bank staff are delegated to groups of borrowers, including screening of peer clients determining who will be accepted into their group; loan analysis by lending institutions is minimal, depending on the assessment of each business partner. Based on this understanding, it can be summarized the factors in group loans that affect the repayment capacity of groups as follows:

1) Group internal settings (GIS). Group internal settings are the process of establishing and managing borrower groups. Group internal settings will determine the character of the group. GIS is concerned with how the group screens colleagues or clients who will become group members. Group expectations of members who are committed to shared responsibility;
2) Group loan appraisal (GLA). Group loan appraisal is a process in which the group conducts a creditworthiness analysis of each of its members;
3) Group loan control (GLC). Group loan control concerns the group's control of collective responsibility for loan repayments.

Empirical research on group lending on repayment capacity includes (Ben Soltane, 2008; Nanayakkara & Stewart, 2015; Rathore, 2017; Abdirashid & Jagongo, 2019). Ben Soltane (2008) examines the factors that influence group payments. The estimation results show that payment is positively influenced by internal rules of behavior, the same business, knowledge of other group members before its formation, peer pressure, self-selection, gender, education, and non-financial services. Factors that predict repayment capacity in Sri Lanka are the term, loan cycle, gender and age of the borrower, group or individual borrowers, the purpose of using the loan, and the frequency of visits by loan officers (Nanayakkara & Stewart, 2015).

Rathore (2017) investigates the role of shared responsibility in improving the repayment performance of microfinance programs. The role of shared responsibility does not run alone and only uses the model of peer selection, peer monitoring, and peer pressure. Still, the effect depends on the social, cultural, and economic environment. Abdirashid and Jagongo (2019), findings of their study show that there is a strong correlation between loan performance and internal group regulations, credit scoring processes, credit policies, and credit risk control measures. Based on theoretical studies and empirical research, the following hypotheses can be developed:

H1: The process of group internal settings and formation has a positive impact on repayment capacity;

H2: Group ability in loan appraisal has a positive effect on repayment capacity;

H3: Good group loan control will increase group repayment capacity.

1.2. Social capital

The contingency theory, first presented by Lawrence and Lorsch (1967), states that different environments place different needs on organizations. This theory says that the best practice for managing an organization will depend on the environment in which it relates. Contingency theory is part of the theory of organizational environment has brought many implications in management decisions in any organization. The theory has also helped organizational management improve decision-making quality by overcoming contingent variables. Social capital is one of the main components in moving togetherness, mobility of ideas, mutual trust, and mutual benefit to achieve mutual progress. The social capital theory is primarily rooted in the notion of trust, norms, and informal networks (Bhandari & Yasunobu, 2009). Fukuyama (2000) defines social capital as trust as a community's ability to work together for a common goal in groups and organizations. Interpersonal trust is the basis for emerging social relationships. Mutual trust will increase cooperation between individuals, reduce transaction costs, and increase business transactions. Fukuyama emphasizes qualities in social relationships (interpersonal trust, shared norms and understanding, etc.), which enable people to get along with others and help to develop social capital (Bhandari & Yasunobu, 2009).

Putnam (1993) defines social capital as "features of social organization, such as networks, norms, and trust, that facilitate coordination and cooperation for mutual benefit." Social capital is a set of horizontal relationships between people. This means that social capital consists of "networks of civic engagements", networks of social attachment that are governed by norms that determine the productivity of a community group or community. Two things are the basic assumptions of the concept of the social model, namely the existence of a network of relationships with related norms, and both of them support each other to achieve economic success for the people included in the network. Social capital in the form of norms and networks of linkages is a precondition for economic development. In addition, it is also an essential prerequisite for the creation of sound and effective governance. There are three important reasons (Putnam, 1993) to explain this. First, social networks allow for coordination and communication that can foster mutual trust among community members. Second, trust has positive implications in social life. This is evidenced by the fact that the relationship of people who have mutual trust in a social network strengthens the norms regarding the necessity to help each other. Third, the various successes achieved through cooperation in the past in this network will encourage the continuity of cooperation in the future. Putnam (1993) further said that social capital could even bridge the gap between groups with different ideologies and strengthen agreement on the importance of community empowerment. Trust, norms, and social networks are core concepts in social capital (Coleman, 1988; Putnam, 1993).

1.2.1. Core concepts in Social Capital

Trust is the basis of moral behavior on which social capital is built. Morality provides direction for cooperation and social coordination of all activities so that humans can live together and interact with one another. High mutual trust will increase community participation in various forms and dimensions, especially in the context of building mutual progress. Fukuyama (2000) defines trust as an attitude of mutual trust in society that allows the community to unite with one another and contribute to increasing social capital. Trust is determined by homogeneity, population composition, and the level of inequality. High trust is found in areas with homogeneous race and population composition and low levels of inequality. Trust sources are distinguished into macro and micro sources, where macro sources include divinity, ethics, and law, while micro sources relate to institutional arrangements. Williamson (1993) in Casson and Godley (2000) states that trust cannot be grown by one source alone. Often mutual trust grows based on the relationship of friends and family.

Rao (2001) states that mutual trust is important for the development of a healthy market economy. Trust reduces the need for contract enforcement and can eliminate monitoring costs. However, persistent trust cannot be built without showing the truth. The limited rationality of humans (bounded rationality) affects efforts to build mutual trust. Therefore, the limits of human rationality must be expanded through communication and the availability of reliable information. Several studies show that trust is significantly and positively related to economic growth and vice versa; the government's success in realizing a better level of economic development can strengthen people's social trust.

Zhang et al. (2020) prove that trust as a form of social capital plays an important role in increasing cooperation between agents, especially in credit lending activities. The results show that gift-giving is especially helpful in establishing trust at the personal level rather than at the community level. In turn, personal and community trust can facilitate access to informal and formal sources of credit, respectively. The article (Brown et al., 2011) discusses the interdependence in the multi-actor financial system in Kenya, which includes informal lenders, rotating savings and loan associations, solidarity groups, savings and loan cooperatives, and microfinance institutions. This paper explores the dynamics between these actors and describes the role of trust and social capital in their complex relationships.

Findings from the empirical literature conclude that social capital should not be taken as a single concept but should be considered in different aspects which may have other effects on performance (Rathore, 2015). For example, trust between borrowers' cultural and social homogeneity has been found to have more significant effects on payment performance compared to incentives due to peer pressure. Al-Azzam et al. (2020) examines the complex relationship between various aspects of social capital and group loan repayments and find geographic proximity, trust, friendship, group homogeneity, and acquaintances to be essential factors in explaining group payments.

Norms are shared values that govern individual behavior in a society or group. Fukuyama (2000) states social capital as an instant informal norm that can develop cooperation between two or more individuals. Social capital norms can be compiled from reciprocity norms between friends. Social norms will play a very important role in controlling the forms of behavior that grow in society. Understanding the norm itself is a set of rules that are expected to be obeyed and followed by community members in a particular social entity. Al-Azzam et al. (2012) in their paper uncovers compelling evidence on the role of social bonds and religion, especially in areas where religion contributes to individual attitudes and beliefs. The finding is that religiosity improves pay performance.

Sanrego and Antonio (2015) in a study on the effect of social capital on loan repayment behavior in the poor. This study proves that group-based lending in Islamic Microfinance can further empower the poor and ensure that financial services are feasible and able to repay their loans with three main approaches implemented simultaneously; (1) spiritual approach, (2) financial approach, and (3) social approach. This study proves empirically that Islamic Microfinance-based groups can ensure that the poor deserve financial services and can repay their loans on time. Furthermore, this demonstrates that the values of Social Capital embedded in Islamic Microfinance-based groups affect the behavior of the poor in paying off their debts.

Dasgupta (2002) assumes that everyone can interact with others without choosing. But actually, everyone has a specific pattern of interacting, making choices with whom to interact and for specific reasons. The network was originally a system of communication channels to protect and develop interpersonal relationships. Establishing this communication channel requires a fee known as a transaction fee. The desire to join others is partly due to shared values. Networks also play a role in coalition building and coordination. In general, it is said that the decision to invest in a particular channel is caused by the contribution of that channel to the economic welfare of the individual. Okello Candiya Bongomin et al. (2017) revealed that social networks mediate the relationship between financial intermediation and financial inclusion of poor households in rural Uganda. In addition, social networks and financial intermediation have a significant and positive impact on the financial inclusion of poor households in rural Uganda. This implies that some of the effects of financial intermediation on financial inclusion through social networks lead to impacts on the financial inclusion of poor households.

1.2.2. Social Capital in Group Lending Model

Social Capital in Group Internal Setting (GIS). The role of "trust" and "norms" is used in group dynamics, which is related to the process from the initial formation of the group to the evaluation of the group itself. Furthermore, the role of "social networks" is intended to establish relationships between existing groups and the surrounding environment. The role of social capital, especially trust, begins with the initial formation of the group, where members are selected using the lending group method itself. As a first step, verification is carried out within the small group itself. The target group that received the loan capital was an existing group or a group that had been formed before applying for a loan from the Community Empowerment Trust Fund Management Unit, through exploring ideas from the Neighborhood Association level, then the "Kebayanan" level and the Village level. These groups include Neighborhood Association groups, "arisan" groups, religious groups, farmer groups, and others. Al-Azzam et al. (2012) find that religiosity improves repayment performance. For new groups, they must go through the incubation process as a stage to prepare the group. The process of exploring ideas to get existing groups or groups that are newly formed is carried out by the Community Empowerment Trust Fund Activities Management Unit together with group companions at the Village level (Village Economic Motivators) or Village Economic Empowerment Cadres. Putnam (1995) states that one that supports the availability of social networks is through neighborly relations (neighborhood network). Social capital will develop and become more productive when used, so social capital needs to be developed to remain productive. In this network, they see that the more someone knows other people, the bigger the network they have, which also means that the social capital they have is also getting bigger. This relationship can be shown by the number of close people who are willing to provide assistance. The process of forming and managing borrower groups is based on 'trust' between group members; based on "norms" that apply in rural areas and involve social networks in rural areas. This is a characteristic of social capital. Based on the study above, the hypothesis developed:

H4: Social capital strengthens group internal setting in increasing group repayment capacity.

Social Capital in Group Loan Appraisal ((GLA). Groups that have submitted loan proposals to the CETF Management Unit will undergo a loan eligibility verification process by the verification team. All group members and group administrators must follow this process with the group being visited by the verification team. Verification sheets have been prepared as material to determine the level of ability to repay loans for each member of the group. The verification process through a verification team visit to this group is accompanied by a Village Economic Motivator or a Village Economic Empowerment Cadre for each Village. The verification process has been carried out and the results will be brought to the funding meeting to obtain a decision on the feasibility of a group loan along with the loan amount of each group member. Minutes of decisions from this funding meeting are the basis for the CETF management agency to provide capital loans to beneficiary groups. Group loan valuation based on social collateral; "norms" that apply in rural areas and involve elements of society or "social network" in rural areas are the characteristics of social capital. Based on the study above, the hypothesis developed:

H5: Social capital strengthens group ability in loan appraisal in increasing group repayment capacity.

Social Capital in Group Loan Control (GLC). Group lending with shared responsibility works through peer selection, peer monitoring and peer pressure. However, it appears that shared responsibility does not work independently, but its effect depends on the social, cultural and economic environment. Level of social ties and level of development are significant determinants. Rathore (2017) gives a practical impression of joint liability works through different mechanisms as suggested by Cull et al. (2007) that other institutional factors such as direct monitoring through qualified loan officers greatly influence the performance of borrowers in groups. Based on the study above, the hypothesis developed:

H6: Social capital strengthens group loan control in increasing group repayment capacity.

Social capital built based on trust, norms, and networks between groups of borrowers and community empowerment trust fund management institutions is expected to strengthen the factors that determine the repayment capacity of borrower groups. Several empirical studies on the value of social capital in repayment include (1) community-based cognitive social capital, proxied here with the general belief that it is highly related to loan repayment performance (van Bastelaer & Leathers, 2006); (2) The values of Social Capital that are embedded in Islamic microfinance-based groups affect the behavior of the poor in paying off their debts (Sanrego & Antonio, 2015). Dufhues et al. (2011) Social capital with the strength of the bond (Bonding) has a positive effect on loan repayment. The following hypotheses can be developed based on theoretical studies and empirical research.

H7: Social capital has a positive impact on repayment capacity.

2. Methodology

This research is a group lending model research organized by Indonesia's Community Empowerment Trust Fund management agency. A research object is a group of borrowers consisting of two categories: the Women's Savings and Loans Group (WSLG) and the Productive Economic Business Group (PEG). The research was conducted in Sragen Regency, Central Java, Indonesia, considering that this region has the largest population compared to other regencies with 2,999 groups. The borrower group consists of 2,348 WSLG and 561 PEG. Using the proportional random sampling technique, samples were taken based on the Slovin formula for as many as 97 group respondents. This study examines the factors determining repayment capacity with a group lending model approach with social capital as the moderating variable. The variable uses factors in the GLM, which adopt the understanding of the group lending program from the "Lending Methodology Module" (Brandt et al., 1998). The variables used in the empirical research model and their indicators can be seen in the Table 2.

The analysis technique used is moderating regression analysis. Here is the model Eq. (1):

$$RC_1 = + \beta_1 GIS_1 + \beta_2 GLA_2 + \beta_3 GLC_3 + \beta_4 BG_4 + \beta_5 SC_5 + \varepsilon_1, \quad (1)$$

where β_1, β_2, β_3, β_4, β_5 are regression coefficients. RC stands for Repayment Capacity; GIS is a group internal

Table 2. The direction of application of variables, indicators and measurement

Variables	Variable description	Indicators	Measurement
Repayment capacity (RC)	Assessment of group debtor's ability to repay loans	– Accuracy in repayment; – Relatively low level of bad loans.	Likert scale
Group internal settings (GIS)	The process of group formation and group internal rules	– Group members can be trusted as a consequence of joint; responsibility; – The desire to help each other; – Group members know each other well; – Responsibility for group obligations.	Likert scale
Group Loan Appraisal (GLA)	Eligibility assessment in group lending	– Loan Application; – Group credit selection; – Approval of loan eligibility; – Based on people (credit history, characters, etc.).	Likert scale
Group Loan Control (GLC)	Monitoring and controlling group member loan repayments	– Coaching and mentoring; – Anticipate congestion; – Group cohesiveness; – Group mentoring ability; – Incentives.	Likert scale
Beneficiary Group (BG)	Group lending program	– Productive economic group (PEG); – Women's savings and loan group (WSLG).	Dummy variable: 0 = PEG;1 = WSLG
Social Capital (SC)	Something that refers to institutional dimensions, the relationships created, and the norms that shape the quality and quantity of social relations in society (Woolcock & Narayan, 2000)	– Giving climate- trust; – Community empowerment; – Charitable involvement; – Spirit of volunteerism; and – Active citizenship. – Adopted by Putnam (2000) in (Woolcock & Narayan, 2000)	Likert Scale

Note: * indicator GIS, GLA, GLC adopted from "Lending Methodology Module" (Brandt et al., 1998).

setting; GLA is a group loan appraisal; GLC is group loan control; BG is the Beneficiary Group (0 – productive economic business group and 1 – women's savings and loan group), and SC is social capital. The full model Eq. (2) can be written as follows:

$$RC_2 = +\beta_6 GIS_6 + \beta_7 GLA_7 + \beta_8 GLC_8 + \beta_9 BG_9 + \beta_{10} GIS\_SC_{10} + \beta_{11} GLA\_SC_{11} + \beta_{12} GLC\_SC_{12} + \varepsilon_2, \quad (2)$$

where β_6, β_7, β_8, β_9, β_{10}, β_{11}, β_{12} are regression coefficients. GIS_SC is the interaction between social capital and group internal settings. GLA_SC is the interaction between social capital and group loan appraisal. GLC_SC is the interaction between social capital and group loan control.

3. Results and discussions

3.1. Result

Descriptive data from respondents consisting of beneficiary groups, Productive Economic Group (PEG) and Woman Saving and Loan Group (WSLG) with percentages in Table 3.

Table 3. Percentage of loan group respondents

	Frequency	Percent
PEG	32	33.0
WSLG	65	67.0
Total	97	100.0

From Table 3, it can be seen that WSLG is 67 percent greater than PEG as much as 33 percent. This data represents the population of the borrower group in the Community Empowerment Trust Fund, where WSLG is more than PEG. WSLG represents a group of female borrowers, and PEG represents a mixed group of male and female borrowers. The regression equation model (Eq. (1)) and the full model Eq. (2) have met the classical assumptions (normality, multicollinearity, and heteroscedasticity). The results of the regression equation can be shown in Table 4.

Table 4. Result of regression equation model

Variables	Model 1	Model 2
Group internal settings (GIS)	**0.108 (0.144)**	**0.062 (0.429)**
Group Loan Appraisal (GLA)	**0.533 (0.000)*****	**0.521 (0.000)*****
Group Loan Control (GLC)	**0.410 (0.000)*****	**0.440 (0.000)*****
Beneficiary Group (BG)	**–0.189 (0.075)***	**–0.170 (0.104)***
Social Capital (SC)	**0.219 (0.005)*****	**0.198 (0.014)*****
GIS_SC	–	–0.073 (0.343)
GLA_SC	–	–0.057 (0.466)
GLC_SC	–	0.216 (0.005)***
R Square	0.570	0.607

Notes: 1) * The coefficient is significant at 0.1. *** The coefficient is significant at 0.01. 2) GIS_SC; GLA_SC; GLC_SC: interaction between the independent variable and the moderating variable – social capital – to test the moderating effect.

The results of the regression equation in Table 4 provide evidence regarding the factors in the group lending model that determine repayment capacity as follows:

1) Group internal settings positively affect repayment capacity with a probability value of 0.144. The internal group setting has a positive but not significant effect on repayment capacity–formation of community empowerment-based groups. The group formation process is carried out with the participation of the village community in the loan recipient sub-district. The group's formation is based on the agreement of the village community by considering the proximity of the area. Selection of members through village deliberation meetings independently and provision of village cadres who work voluntarily and the ability to comply with and implement the provisions in joint liability. The formation and arrangement of groups based on regional proximity do not guarantee that groups will be able to commit to joint liability provisions. However, the consensus agreement will have a positive impact on repayment capacity. The results of this study do not support (Abdirashid & Jagongo, 2019) self-internal regulations affecting loan performance.
2) Group loan appraisal positively affects repayment capacity with a significance level of 1%. The results of this study prove that if the group can carry out a good group loan feasibility analysis, it will increase the repayment capacity of the group. Groups that have submitted loan proposals to the Community Empowerment Trust Fund will undergo a loan eligibility verification process by the verification team. The verification team verifies the loan group accompanied by a Village Economic Motivator or Village Economic Empowerment Cadre. The verification results will be brought to a funding meeting to get a decision on the eligibility of group loans and the loan size of each group member. Minutes of decisions from this funding meeting serve as the basis for the Community Empowerment Trust Fund Management Institution to provide capital loans to the beneficiary groups. The group conducts analysis and selection of loan proposals for its members based on the feasibility of the proposed loan. Analysis of group loan eligibility based on group members' character, credit history, and ability to repay. This finding is in line with (Ben Soltane, 2008)

regarding factors that influence group payments, namely internal rules of behavior, similar business ventures, knowledge of previous group members' payment history.

3) Group loan control positively impacts repayment capacity with a significance level of 1% (H3 is proven). In addition, credit risk control is carried out by the group by monitoring and putting pressure on group peers to avoid bad loans. These results are in line with the research of (Al-Azzam et al., 2012; Rathore, 2017; Abdirashid & Jagongo, 2019) on the role of shared responsibility in improving the repayment performance of microfinance programs using peer monitoring, peer pressure, and credit control.
4) Social capital (SC) has a significant effect on repayment capacity. Social capital is built because of a supportive climate of mutual trust, group empowerment, involvement in social activities; charitable involvement; the spirit of volunteerism; and active citizenship. Social capital is formed through mentoring activities, group development, and giving rewards to orderly groups in terms of loan repayment. The results of this study are in line with (Zhang et al., 2020; Okello Candiya Bongomin et al., 2017; Sanrego & Antonio, 2015) that the values of Social Capital embedded in the group affect the behavior of the poor in paying off their debts.
5) The beneficiary group affects repayment capacity in the opposite direction. This provides evidence of a significant difference between WSLG and PEG in repayment capacity. WSLG has a better repayment capacity than PEG. This is because WSLG consists of all women, while most PEG members are men. This finding is in line with research by (Dorfleitner & Oswald, 2016; Jumpah et al., 2018; Schurmann & Johnston, 2009; Shahriar et al., 2020). According to Schurmann and Johnston (2009), women are the primary target beneficiaries of the microcredit program in Bangladesh. This is because women feel more sensitive and more reliable in terms of borrowing and borrowing.
6) The test of social capital strengthens the factors that influence the repayment capacity of the group, as shown in the results of the second equation. The test of social capital as a moderating variable uses the absolute difference test to consider that the interaction test has the potential to occur multicollinearity between independent variables. The results of testing social capital as moderating variables such as GIS_SC and GLA_SC showed insignificant results with probability values of 0.343 and 0.466, respectively. Meanwhile, social capital strengthens group loan control to increase the repayment capacity of the group. This is indicated by the probability value of GLC_SC of 0.005 significant at 1%. This indicates that group loan control supported by social capital will increase the repayment capacity of the group. The results of hypothesis testing can be summarized in Table 5.

Table 5. Result of hypothesis testing

Hypotheses	Result
H1: The process of forming and regulating the internal group has a positive impact on the repayment capacity of the group;	not supported
H2: The group's ability in loan appraisal has a positive effect on the repayment capacity of the group;	supported
H3: Controlling group loans will increase group repayment capacity;	supported
H4: Social capital strengthens group loan control in increasing group repayment capacity;	not supported
H5: Social capital strengthens group loan control in increasing group repayment capacity;	not supported
H6: Social capital strengthens group loan control in increasing group repayment capacity;	supported
H7: Social capital has a positive effect on repayment capacity.	supported

3.2. Discussion of research findings

As predicted by theory, the empirical analysis of this study proves that the management of group loans consisting of group loan appraisal, group loan control, and social capital is a determinant of repayment capacity. The process of screening and selection of group loans monitoring and controlling group loans and social capital impact repayment performance. These results align with research (Al-Azzam et al., 2012) that peer monitoring, group pressure, and social ties reduce defaults. Ghatak and Guinnane (1999) analysed how joint liability loans encourage repayment screening, monitoring, verification, and enforcement. Social capital acts as a moderating factor or a factor that strengthens the control of group loans to increase repayment capacity. The actualization of social capital in enhancing the control of group loans can be proven by the performance of non-performing loans from community empowerment trust funds. Based on

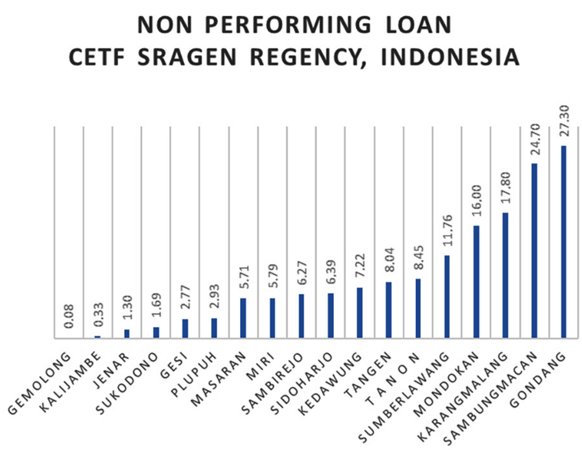

Figure 1. NPL CETF Sragen Regency, Indonesia in 2020

CETF non-performing loan data during the pandemic in 18 regions of Sragen Regency Indonesia in 2020, it can be seen in Figure 1. The average NPL for WSLG and PEG in 18 regions in 2020 is 8.59 percent. Even 14 of the 18 areas have an average NPL of 4.91 percent. The 14 regions consist mainly of WSLG. This ratio meets the provisions of healthy microfinance with the criteria for a non-performing financing ratio of a maximum of 10 percent.

The findings of this study are in line with the concept of social capital according to Putnam (2000, pp. 18–19) in Bhandari and Yasunobu (2009), which says that social capital refers to the relationship between individuals and social networks and norms as well as a trust so that he assumes that social networks have values and social contacts affect individual and group productivity. Social capital as a shared network with norms, trust, and understanding that facilitate cooperation between or between groups. Social capital refers to the institutions, relationships, and norms that shape the quality and quantity of a society's social interactions (Grootaert, 1998; Narayan, 1999). In the internal group setting, groups are formed by extracting ideas from the neighborhood Association level, the "Kebayanan" level, and the village level. These groups include the Neighbourhood Association group, social gathering group, recitation group, farmer group, and others. For example, suppose the community group that will apply for a loan to the CETF management agency turns out to be newly formed. In that case, an incubation process must be carried out to prepare the group, and the group administration is ready to get loan capital from the CETF managing agency. The process of exploring ideas to get existing groups and newly formed groups are carried out by the CETF management agency and group assistants at the Village level, namely the Village Economic Motivator or Village Economic Empowerment Cadre. Borrower groups are formed based on geographical proximity, trust, friendship, group homogeneity, and acquaintances are important factors in explaining group payments (Rathore, 2015; Al-Azzam et al., 2020).

Social capital as a factor that strengthens group loan control in increasing repayment rates is the finding of this study. This finding can be explained by the general theory of peer monitoring (Stiglitz, 1990). Peer group lending addresses the three main issues of the lending relationship: screening, incentives, and enforcement. These three loan relationship problems can be solved by having substantial social capital. The process of strengthening social capital for controlling group loans is formed by a network between management institutions, loan groups, and community empowerment. First, the management agency gives permission to the group to conduct group loan appraisal screening to avoid the possibility of group members being in default. Then, the group selects the creditworthiness of its members and submits a group loan proposal to the Community Empowerment Trust Fund Management Agency.

Furthermore, the verification team will assess the feasibility of group loans through visits to groups accompanied by village economic motivators or village economic empowerment cadres in each village. The verification results will be brought to a funding meeting to get a decision on the eligibility of group loans and the loan size of each group member. The minutes of the decision from this funding meeting serves as the basis for the Community Empowerment Trust Fund Management Institution to provide capital loans to the beneficiary groups.

According to Stiglitz (1990), there is a risk transfer from lenders to group members, so group members strive to earn income for repayment. The potential for recurring loans is a clear incentive for repayment. Such is the enforcement function performed by group members. The role of the manager of the community empowerment trust fund in assisting and strengthening groups is a representation of social capital that strengthens the filtering, incentive, and enforcement functions in controlling group loans. This is in line with the research results of Dufhues et al. (2011), van Bastelaer and Leathers (2006). Capital loans to groups of borrowers with a joint responsibility system and without collateral – group lending model – require strong and rooted social capital through a group empowerment approach to improve repayment performance. The findings of this study support the research of van Bastelaer and Leathers (2006) community-based cognitive, social capital has been shown to be strongly associated with payment performance. This suggests that the attitudes and values shared by community members create an environment in which group borrowers respect their involvement. Social capital is formed based on trust, norms, and networking both within the internal group and with the Community Empowerment Trust Fund management unit through activities including:

- Regular meetings of management and group members every month;
- Regular meetings of the group management associations every month in each village;
- Monthly meetings and coordination meetings for village economic motivators or village economic empowerment cadres;
- Assistance and development of group administration;
- Group training from primary level, advanced level, and independent level;
- Visits of the Community Empowerment Trust Fund Management (CETF) Institution to members and groups to strengthen the kinship ties of kinship between the Community Empowerment Trust Fund Management Agency and groups;
- Group gathering to enhance the relationship and emotional bond between CETF management agency and the group;
- Incentives from lenders to groups in the form of rewards for group members as group motivation in repayment;
- Incentives are social in the form of social responsibility funds to the poor in the form of basic necessities,

giving to the community for health protocols during the COVID-19 pandemic.

This research contributes to the body of knowledge of social capital theory. Social capital enhances repayment behavior in group loan programs seen not as causal but in moderation. This study reinforces the findings that have been documented in the paper (Al-Azzam et al., 2020) about having proven that various aspects of social capital and their interactions have an impact on payment performance. Meanwhile, several empirical research results explain social capital as an intermediary in increasing group loan repayments (Okello Candiya Bongomin et al., 2017; Sanrego & Antonio, 2015). The findings in this study imply that strong social capital will encourage the group lending model to avoid default. This success was made possible because the basic principle of social capital, which emphasizes the importance of maintaining good relations and trust between fellow citizens and lenders, has been able to replace collateral in the form of collateral, a standard regulation in providing bank credit in general. In other words, substantial social capital is a reliable "collateral". Moreover, the bank can accept this alternative collateral because, within the community itself, there has been an agreement to assume joint responsibility and mutual control between fellow citizens.

Deviations committed by a citizen in the use and repayment of credit are considered a personal problem. Still, they are actions that cause a loss of trust in society. Therefore, the community can impose social sanctions on citizens who cause a loss of trust. This is in line with Coleman's thinking as described earlier that "the main pillar of social capital is in the form of a social structure that creates confinement in a social network that makes everyone interconnected in such a way that obligations and sanctions can be imposed on everyone who becomes members of that network" (Coleman, 1988). Social capital has important policy implications for investing in the organizational capacity of the poor and helping to build bridges between communities and social groups. To this end, the use of participatory processes can facilitate consensus building and social interaction among stakeholders with diverse interests and resources. In addition, social capital finds ways and means to address social inequalities and build social cohesion, and trust is essential for economic development.

Conclusions

The Community Empowerment Trust Fund is a continuation of the revolving fund of the National Program for Independent Rural Community Empowerment which ended in 2014. The fund is managed by the community independently through the Community Empowerment Trust Fund activity management unit to provide easy access to business capital for both the community as beneficiaries and groups business, improving services to poor households in meeting the need for business capital through beneficiary groups. This study attempts to explain the factors that affect the performance of loan repayments using the group lending model approach. The factors in the group lending model approach are the management of loans in groups starting from the formation and arrangement of groups; group loan screening or group loan appraisal; and group loan control and social capital.

This study has succeeded in showing the resolution of three main problems of group loan relations, namely screening, incentives, and enforcement, represented by factors such as group loan appraisal, group loan control, and social capital to increase group repayments. Social capital strengthens the control of group loans to increase repayment capacity. This study provides evidence that the unbanked poor are able to manage group loans to grow their business. Social capital can play an essential role in making loans effective for community development. The most significant contribution to the development of social capital is financial inclusion for rural communities and creating more independent rural community groups. This study also provides evidence that the group of female borrowers has a higher collectability rate than the group of productive economic enterprises whose members are primarily male.

The results of this study provide theoretical implications that Group Lending with Joint Liability does not only work using a model with peer selection, peer eligibility assessment, and peer monitoring and control, but requires the support of social capital. This is in line with joint liability work through different mechanisms (Rathore, 2017). Trust among group members towards joint liability; norms that apply in rural communities; social networks bonding between group lending – communities – lending institutions are characteristics of social capital. Social capital provides strengthening to group lending control dynamics to increase repayment capacity

The practical implication is that group lending with joint liability will be able to increase repayment capacity by strengthening social capital through the role of the CETF managing institution in controlling group lending through regular group assistance. Assistance uses a group empowerment approach that aims to increase loan repayment capacity and increase group independence in using funds for entrepreneurship to increase the income of group members. Assistance requires adequate resource capacity.

The limitation of this research is that strengthening social capital with a group empowerment approach requires large costs with a risk of default. Future research could add reward factors as repayment incentives and social sanctions to prevent default.

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