



Analysis of Joint Liability Groups' Performance Using Social Cohesion Approach to Sharia Savings and Loans Cooperatives in Indonesia

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Abstract. This study intentions to discover whether social cohesion significantly affects the performance of joint liability (tanggung renteng or TR) groups in sharia savings and loans cooperatives in Indonesia. The social cohesion dimension in this research includes peer selection and monitoring, peer sanctions, and social ties. Meanwhile, the TR group performance dimension is analyzed based on its ability to overcome moral hazards. This investigation adopts the quantitative method design. Focusing on the population of sharia savings and loan cooperatives, particularly in Java, surveys are distributed to their members to collect data. The data were evaluated quantitatively using PLS-SEM. The results show that peer selection and monitoring, and social ties have no impact on moral hazard behavior that measures TR group performance. In fact, social ties have a strong influence on the process of peer screening and monitoring. On the other hand, peer sanctions significantly positively impact moral hazard behavior. It is because the members of the observed TR groups cannot apply sanctions decisively and then trigger free-riding and strategic defaults in the group. There have not been many studies on TR groups in Indonesia that involve the social cohesion dimension in sharia-based cooperatives. This research can provide more in-depth knowledge about how the performance of TR groups in Indonesia is influenced by the level of social cohesion owned by sharia cooperative members.

Keywords: joint liability groups · social cohesion · Sharia Savings and Loans Cooperatives · moral hazards · PLS-SEM

1 Introduction

The Islamic finance industry in Indonesia has experienced significant development over the past few decades. Apart from the fact that the population of Muslim communities in Indonesia reaches 87.2% [1], it is also because of the public awareness to begin including Islamic values in all aspects of their lives. It is one of the driving factors for the Islamic financial sector to advance and develop to meet the community's needs. The Indonesian Ministry of Cooperatives and SMEs of the Republic of Indonesia data shows that there were around 4,648 sharia savings and loans cooperatives (koperasi simpan

pinjam dan pembiayaan syariah or KSPPS) in Indonesia until the end of 2018. This number includes 3.36% of the total cooperatives nationwide, which amounts to 138,140 cooperatives. Most of these cooperatives are concentrated in Java [2].

Several works of literature record various challenges faced by KSPPS, such as agency problems triggered by the existence of asymmetric information that causes moral hazards [3]–[5]. In addition, the low-cost efficiency due to high transaction costs is also often discussed in several studies [4]–[6]. The high dependence of KSPPS on the flow of aid funds from external sources, such as the government and donor agencies, due to lack of capital is also a problem that is often faced by many KSPPS [6].

In overcoming these problems, Islamic cooperatives can harness the group lending mechanism with joint liability. This mechanism is one of the alternatives that MFIs often use in channeling financing to small entrepreneurs. They are generally people who find it difficult to get access to banking since they do not have quality physical assets. The joint liability mechanism provides assurances in the form of social collateral and local norms and values among members [8, 9], and if one member cannot fulfill his obligations, then his group colleagues are obliged to fulfill the arrears.

Furthermore [10] stated that a group lending performance is not only determined by the level of social capital or social ties in the group. It also requires group dynamics that are manifested through peer monitoring and sanctions. These aspects will form a social cohesion that determines the performance of a lending group. Social cohesion is essential in mitigating the problem of asymmetric information in groups [11]–[13].

Group lending with joint liability has become a *prima donna* in microfinance institutions (MFIs) of developing countries. Not only MFIs, but many non-governmental organizations (NGOs) and banks also implement joint liability mechanisms in channeling financing to the poor. It is because this mechanism is believed to be able to increase the repayment rate and reduce moral hazard.

A number of studies on group lending in global MFIs show mixed results. Some MFIs proved that their lending groups have increased repayment rates by utilizing the group lending method with joint liability. However, few MFIs even encountered several obstacles and eventually switched to an individual lending model. Grameen Bank and BancoSol, which have been known as pioneers of group lending mechanisms, are the examples [14].

The group lending mechanism with joint liability is usually chosen as a micro-financing model to achieve a high repayment rate [17, 18]. However, some studies show that such mechanisms cannot always raise the repayment rate. In some cases, a group lending model has even increased free-riders among its members [14, 19, 20]. Several other studies have also shown that several large cooperatives in Indonesia use individual lending mechanisms and have never implemented a joint liability financing model, and they succeeded in overcoming the problem of bad debts in their institutions, such as BMT Bina Ihsanul Fikri (D.I. Yogyakarta) and BMT Beringharjo (D.I. Yogyakarta) [21, 22].

On the other hand, a number of group lending studies in global MFIs provide opposite evidence, in which joint liability mechanisms can increase the repayment rate of borrowers, which consisting of householders and micro-entrepreneurs [23–25]. Several other studies have also shown that the joint liability mechanism provides a better repayment

rate and increase borrowers' profits [26]. The advantages of the group lending mechanism are also proven in studies conducted by learning machine [27]. The application use significantly mechanism unfortable problem [28], which showed that cooperatives with a joint liability mechanism could reduce nonperforming loans (NPLs) and increase member participation.

This phenomenon is interesting to analyze further. When the trend of using group lending with joint liability mechanisms in many countries reversed course by returning to the old mechanisms, many cooperatives in Indonesia persisted with this lending mechanism.

2 Literature Review

2.1 The Concept of Group Lending with Joint Liability

Dr. Yunus popularized the group lending financing model through the Grameen model in Bangladesh around 1976. A group lending is a financing model through a semi-formal group formed from a group of people who need loans without physical collateral. This financing model is a financing model that is often used by microfinance institutions (MFIs) [26]. Financing models with such mechanisms are generally used to help the solvency of those who are poor and are considered to have no quality physical assets as collateral by formal financial institutions.

Indonesia has its own term for this financing model, namely the tanggung renteng (TR) model. Such a model was first applied in a women's cooperative in Malang City, East Java Province, from 1977 until now [29], and it has become one of the major cooperatives in Indonesia. The TR financing model has been implemented in many cooperatives in Indonesia, and many have benefited from it, such as declining NPLs and increasing member participation [30]. The TR model or system is defined as a system containing the shared responsibility of each group members for all their obligations to the cooperative based on the openness and mutual trust [31], where each member becomes a guarantor for his/her partners in the same group so that no physical guarantee is needed [32].

Theoretically, the group loan mechanism has advantages over individual loans. Group lending model is believed to prevent lenders from misjudging potential borrowers and reduce transaction costs from screening, monitoring, and auditing activities during the financing process [33]. For MFIs such as cooperatives, applying this financing model can motivate its members to participate more active in their cooperatives [34]. In addition, the group lending mechanism is also believed to be able to increase the repayment rate and overcome moral hazards problems so as to reduce non-performing loans (NPLs) [38].

Meanwhile, in terms of cooperative members who act as borrowers, through the group lending mechanism, they have a forum to help each other, not only in the issue of loan repayment but also in other issues related to their business [30]. Through this group, they can exchange information and knowledge with each other. They can also help each other find solutions to any problems between them. It can happen by utilizing social cohesion in the TR group. Strong mutual trust and the similarity of norms and

values among members can make them confident that fellow group colleagues will not harm or be harmed by other group members.

The joint liability financing model requires social cohesion that can glue each group member so that they can maintain a sense of community and help to increase the repayment rate and overcome moral hazards. In practice, not all applications of this financing model can overcome these problems. Studies conducted by [39] show that strong social ties increase free-riding behavior, strategic defaults, and higher delinquency. The closeness among the group members finally made them agree to decide not to repay the loan. The application of group sanctions also creates problems in the group. Some members feel uncomfortable when it comes to putting pressure on their 'naughty' peers. Furthermore, when the sanctions are felt too harshly by some members of the group, they decide to leave the group without fulfilling their obligations [40].

2.2 Social Cohesion in Joint Liability Group

Social cohesion can be defined as "the extent of social togetherness in a territorially defined geopolitical entity" [41]. According to McCracken (1998) in [42], it can be viewed as "the connections and relations between societal units such as individuals, groups, associations as well as territorial units." It might serve as the adhesive that ties a group or civilization together. Then this connection builds cohesion based on "a common sense of belonging and attachment, shared values, trust, and a sense of social solidarity." (Australian Institute of Health and Welfare 2005, p. 40, in [43]).

Social cohesion significantly influences a lending group's performance through several components that make it up. The first component is peer selection and monitoring, where each group member is free to choose or remove members considered safe or risky. In group lending, small entrepreneurs tend to look for friends who live in the same area, have social ties in the community, or have the same risk profile. The goal is easy access to information about fellow borrowers. Each individual with a low-risk profile will form a group and reject those with a high-risk profile [44]. Thus, it creates trust among members and develops a strong sense of community and cooperation between them [45].

Peer monitoring serves as a "miniature insurance network and juries," helping those who have difficulty repaying loans while threatening to expel members who commit harmful act. However, the key to peer monitoring lies in the proximity of the members of the lending group, both personally and physically (where they live). This proximity can allow them to observe or monitor each other [46]. Intensive peer monitoring can function as intra-group insurance that makes it difficult for each member to perform actions that are not expected by the group [46] to reduce the probability of asymmetric information.

Group lending will be able to overcome asymmetric information problems only if the group is formed through peer selection and monitoring. Thus the group will only contain people of the same quality (homogeneous). Group lending with homogeneous members can produce a good performance, which is indicated by the increasing performance of repayment rates [47].

The next aspect is group pressure. Joint liability groups must have an objective, transparent and unequivocal penalties for members who evade responsibility or intentionally engage in free-riding [48]. Sanctions are generally determined based on the

agreement of each group member, in which members who are considered delinquent will be excluded from the group [49]. If there is no penalty from the internal and/or external group, or if the sanction is not solid and unable to bind the members, then the joint liability group cannot overcome the issue of moral hazard or default strategy. It will also make it difficult for the group to perform well in the payout rate.

The last aspect is social ties. This concept is based on the notion that an individual in a social context or society is unlikely to be able to solve problems on themselves alone. He/she will be socially powerless and need others who share common interests to build togetherness and work together in finding solutions [51]. The success of the mechanism of joint liability is closely related to how well a community can utilize social ties [52]. If the members of a lending group have high trust among them, able to form strong network ties, then there will be a high probability of success of the group utilizing the joint liability mechanism and ultimately creating prosperity for them.

3 Methods

3.1 Population and Samples

This study uses a quantitative approach. The population observed is KSPPSs which run operational activities in Indonesia, with the population target more focused on KSPPSs on Java Island. The rationale is that sharia cooperatives in Indonesia are very concentrated on the island.

The sampling technique used is purposive sampling in selecting respondents and KSPPSs. The samples requirements are as follows: 1) Respondents are members and/or board members of KSPPS; 2) They have been cooperative members for at least three years; 3) They have taken financing in any contract at KSPPS at least three times during their membership in TR group; 4) The KSPPSs have issued complete financial reports for three consecutive years.

3.2 Data Collection and Analysis

The data are gathered through the dissemination of questionnaires, measured by 4 Likert scales, ranging from 'strongly agree' to 'strongly disagree.' The survey are distributed using a google form to KSPPS members in Java Island. In addition, the data are also collected through interviews with parties who have competent in fields related to this research. Given the pandemic conditions that forbid for face-to-face meetings, the interview process is carried out through social media such as WhatsApp, and telephone conversations.

The data collected are then screened univariately. The objective is to analyze the respondents' characteristics and the possibility of missing values in the data. The data are subsequently processed utilizing the partial least square-structural equation model (PLS-SEM) with SmartPLS-4. Some tests of the PLS-SEM model are carried out as follows:

Outer model testing: This testing aims to determine the construct validity and reliability for every indicator. The test of construct validity comprises convergent and discriminant validity assessments. An indicator is accepted as valid if it meets the convergent

validity test criteria with a loading score greater than 0.70, a p-value less than 0.05, and an AVE value greater than 0.50. The discriminant validity test consists of comparing the value of the square root of the AVE for each idea to the correlation coefficient between constructs. For a research model to be regarded as suitable, the value of the square root of AVE must be more significant than the correlation coefficient between the components. All latent variables must have composite reliability and Cronbach's alpha values of more than 0.70 to be included in the model, as determined by reliability tests.

Inner model testing: The R^2 value in the inner model test is examined using the goodness-of-fit test. The inner model analysis examines the R^2 value for the dependent and independent variable's path coefficient. The t-statistics value is analyzed to test the significance of each path. The bigger the R^2 value, the better, as a high R^2 value indicates that the independent variables in the inner model can explain a greater range of changes in the dependent variable. The condition for examining the path coefficient value or t-statistics from the inner model is a t-statistics value of 1.96 with $\alpha = 0.05$ for the two-way test.

4 Results and Findings

4.1 Respondent Profiles

A total of 98 respondents from multiple KSPPSs on Java Island were evaluated. The majority of KSPPSs operate in the province of West Java and D.I. Yogyakarta. According to the obtained statistics, approximately 76.5 percent of respondents are female and the remainder are male. The result crosstabs analysis shows that 62.2% of female respondents had a high school education or equivalent. The rest consists of elementary and junior high schools, diplomas, and undergraduates. Meanwhile, of the male respondents, as many as 52.2% were high school graduates and equivalents, and the rest had a diploma and undergraduate education background. It indicates that male respondents' educational backgrounds are higher than women.

Regarding occupation types, as many as 60.8% of female respondents work as small entrepreneurs and homemakers. Meanwhile, 82.6% of male respondents work as private company employees. It is known from the data that 86.4% of female respondents have been KSPPS members for ten years, while in terms of male respondents, as many as 73.9% have been KSPPS members for about five years. Furthermore, as many as 74.3% of female respondents have been members of the TR group for more than two years. Meanwhile, as many as 65.2% of male respondents have been members of the TR group for no more than two years. It is an indication that women in Indonesia tend to be the ones who use KSPPS services the most compared to men.

4.2 Descriptive Analysis

Peer selection and monitoring: Based on the data, it is known that the process of peer selection and monitoring in each TR group has been relatively well. Table 1 shows that, on average, about 90% of respondents admit that they live in the same village or area, work together in their business, and only accept new members who have been

known and recommended by fellow group peers. However, it turns out that not all group members can give such recommendations. Further analysis showed that 53.06% of respondents admitted that only group leaders could give recommendations to new members. Moreover, 64.29% of respondents stated that many of their close relatives also joined the same group. It has an impact on their social ties.

Social ties: The table also shows that the respondents' social ties are relatively strong. On average, about 90% of respondents admitted that the relationship between group members was quite good. Therefore, they did not hesitate to ask for help if they had difficulties. They also tend to meet frequently at every routine meeting. Further analysis showed that around 90% of respondents stated they trust and are willing to help each other with their group peers. It is certainly not surprising considering that many close relatives join the same group.

Peer pressure: The high level of social ties among group members usually impacts the implementation of group pressure. It is known that as many as 45.9% of respondents admitted that they had never punished their peers who committed strategic defaults. Further analysis showed that 86.73% of respondents revealed that their group had penalties rule for those who refused to fulfill their obligations. However, about 55.1% of respondents felt reluctant to reprimand their peers who were late in paying the installments. Thus, we conclude that they tend to have difficulty applying strict sanctions in the group.

TR group performance: A well-performing joint liability group will impact the possibility of moral hazard action in the group. In Table 1, it can be seen that as many as 40.8% of respondents noted that some of their peers made strategic defaults, which made other members have to bail out their obligations. Further analysis of the questionnaire results showed that as many as 45.92% of respondents used credit not following the agreement made with KSPPS. The credits that were supposed to be used entirely for productive activities some of them were instead used to meet household needs and pay their children's tuition fees. In addition, 31.63% of respondents stated that several peers were reluctant to attend regular meetings and preferred to leave their installments to the group leader.

4.3 Partial Least Square-SEM (PLS-SEM) Analysis

- 1) *Outer Model Testing:* the test begins with the data validity test, i.e. convergent and discriminant validity. Using the e SmartPLS 4 software, the result of outer model testing is depicted in Fig. 1.

From the model in Fig. 1, all indicators have outer loading values >0.5 , which can be maintained in the model as long as the latent variable has AVE values of >0.5 [52]. The discriminant validity and reliability test results can be seen in Table 2, where all variables have met the requirements of the tests.

- 2) *Inner Model Testing:* Two aspects are tested in the inner model testing, i.e. structural model testing and research hypothesis testing. The result of structural model testing is in Fig. 2 as follows.

Table 1. Respondents Opinions With Respect To Analyzed Variables

Name of indicators	Statements	Support the statement (%)	Not support the statement (%)
Peer selection & monitoring:			
DSTC	Living in the same or close area	91.84	8.16
BUSN	Running business cooperation with group peers	90.82	9.18
OGRP	Joining other informal groups	84.69	15.31
RCOM	Group peers' recommendations are mandatory	94.90	5.10
KNOW	Those who can join are only those who are known	93.88	6.12
Peer pressure:			
SANC	Never punished a defaulting member	45.92	54.08
Social ties:			
KBET	Getting to know all peers closely	97.96	2.04
AHLP	No hesitation in asking for help from group peers	91.84	8.16
METG	Attend every meeting	93.88	6.12
TR group performance:			
DFLT	Some peers do a strategic default	40.82	59.18
CASH	Some peers refuse to pay group deposits	28.57	71.43
RLCT	Some peers are reluctant to come to the meeting	31.63	68.37
RPRM	Once reprimanded by the group leader for being late paying installments	67.35	32.65

In Table 3, it can be seen that peer pressure significantly positively influences TR groups' performance in overcoming moral hazards. This positive direction of influence is evidence that when TR group members cannot apply strict sanctions, it causes moral hazards behavior in the group. Violations, such as late payment and infrequently attending

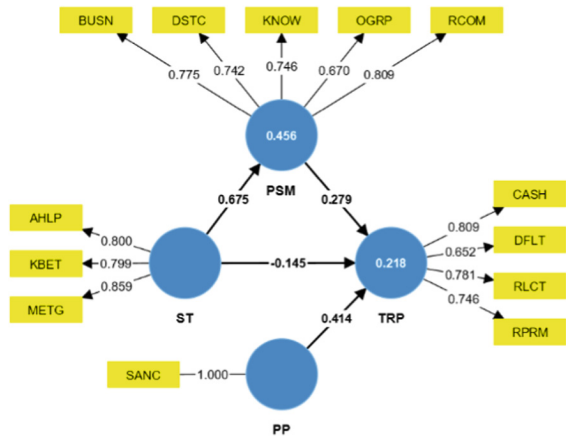


Fig. 1. The result of outer model testing

Table 2. The Discriminant Validity and Reliability Test Results

	PP	PSM	ST	TRP
Discriminant validity	1.000	0.750	0.820	0.749
Cronbach's alpha	1.000	0.805	0.758	0.758
Composite reliability	1.000	0.865	0.860	0.836
Average variance extracted (AVE)	1.000	0.562	0.672	0.561

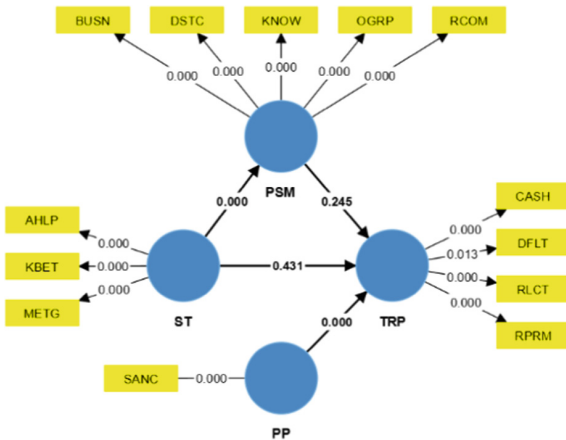


Fig. 2. The result of inner model testing

Table 3. Path Coefficients

	O1	M2	STDEV3	T statistics	p values
PP - > TRP	0.414	0.432	0.116	3.579	0.000
PSM - > TRP	0.279	0.235	0.240	1.162	0.245
ST - > PSM	0.675	0.679	0.072	9.330	0.000
ST - > TRP	-0.145	-0.129	0.184	0.787	0.431

¹ O is the original sample; ² M is the sample mean; ³ STDEV is the standard deviation

regular meetings, can seriously impact the TR group's performance. When the violators are not sanctioned, this causes other members to be motivated to do the same action. The lack of meetings among members caused the information to be unevenly dispersed and lowered members' sense of community and mutual aid.

Another interesting finding in this study is that social ties turned out to have no significant effect on the behavior of moral hazards in the TR group, even though the direction of the coefficients was negative. Likewise, with peer screening and monitoring. This variable has no significant influence on moral hazard behavior. Furthermore, the positive direction of the coefficient indicates that, in this case, there is a tendency when group members have strong social ties to trigger free-riding behavior and strategic defaults. This study's results align with studies conducted by one. This poor behavior can get worse when the penalty is not strictly applied.

On the other hand, social ties significantly influence the peer screening and monitoring process. A descriptive analysis of the questionnaire showed that the observed TR group members had strong social ties. One proof of about 90% of respondents stated that they trust and are willing to help each other with their group peers. It tends to be caused by the close kinship between members and other factors such as close residence, business cooperation, and joining other informal groups besides TR groups.

5 Conclusion

This study intends to investigate the impact of social cohesion on TR group performance in Indonesian KSPPS. Social cohesion is measured using three aspects, namely peer screening & monitoring, peer pressure, and social ties, while TR group performance is analyzed based on its ability to overcome moral hazards.

The results of this study found some interesting findings. Analysis of the questionnaire showed that most TR group members had several close relatives who joined the same group. It has several severe consequences. First, applying the TR model cannot overcome the problem of moral hazards in the group. Each group member can pay off debt but tends to be late. Many respondents admitted that they did not use credit funds for business purposes, following the contract with KSPPS. Instead, they used them partly to meet household needs and pay their children's tuition fees.

Secondly, the application of sanctions in the group is not firm. Some respondents even stated that they did not feel comfortable if they had to reprimand their defaulted group

peers. Many of them also claimed to have never punished their defaulted group peers. The results of the PLS-SEM analysis show that peer pressure significantly affects the TR group performance. When the application of sanctions is not firm, it is not surprising that some moral hazard actions occurred in the group.

Third, the TR group members have high social ties, which is indicated by the close relationship between them both inside and outside the TR group. It facilitates the process of peer screening and monitoring, as evidenced by the strong influence between these two variables significantly. However, this process did not help the TR group's performance in overcoming moral hazards. Many respondents stated that a new member must have the group leader's recommendation to be accepted in the group. It could lead to collusion where the group leader tends to include his/her relatives in the group. It explains why peer screening and monitoring, and social ties have no significant effect on the TR group performance.

It is a good thing when social ties among group members are high. However, when its utilization does not lead to the common good of groups and organizations (KSPPS), it might cause losses.

This study can be continued using a qualitative approach to search deeper into some information that has not been clearly revealed, such as how close is the kinship between group members (if any), or how deep is the KSPPS staff and boards involved in implementing the TR model.

Therefore, based on the data and information gathered through this research, we suggest that forming a TR group should involve the KSPPS staff and boards. Thus, they could also monitor and guide members in the peer screening and monitoring process, including selecting group leaders and rules. Therefore, the group formed does not become a 'family group.'

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