The Decision to Apply for Bank Credits: A Preliminary Investigation of MSME Herding Behavior from Indonesia

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Abstract
It is likely that micro, small, and medium enterprises (MSMEs) owners apply for credit not because of their intention but because they follow other MSME owners’ behavior. The behavior to follow the general tendency is commonly known as herding. This study aims to analyze the effect of herding, both group herding and reputational herding in credit decision of MSME owners. We generate our data by surveying 150 MSME owners in the City of Salatiga. The results show that herding does not directly affect the decision to apply for credit. However, herding indirectly affects the decision to apply for credit through the intention to apply for credit.

Keywords. herding, intention to apply for credit, decision to apply for credit

JEL Classifications: D71, D91, D92, G41

Introduction
Micro, small, and medium enterprises (MSMEs) play an important role in a country’s economy, both locally and globally (Singh, Garg, & Deshmukh, 2010) because they can help reduce unemployment level and eradicate poverty (Agyapon, 2010) and contribute to GDP (Coetzee & Buys, 2017). MSMEs are agile business units that potentially act as the engine of innovation. Besides, MSMEs are likely to incur fewer costs in dealing with changes (Valaei et al., 2017).

Aruna (2015), Demirgüç-Kunt and Martinez Peria, 2011 and Caca and Kushi (2010) suggest that financial capital is one of the main growth constraints of MSMEs. An alternative way to overcome this constraint is an improvement in the access to bank credit (Roman & Rusu, 2012). Previous studies investigate factors that affect MSME owners’ credit decision. La Ferrara (2003), Allen (2013) and Zeller (2001) empirically...
show that MSME owners’ low income affects their credit decision. It is also shown that bank location (Boyd et al., 1994) and banks’ service quality (Newman, 2001; Zhou, 2007 and Arasli 2005) also influence credit decision of MSME owners. Further, the rationality of credit-related costs (such as interest and provision) charged to bank clients also affects credit decision (Javalgi et al., 1989; Boyd et al., 1994; Yue and Tom, 1995).

Previous literature on credit decision emphasizes individual preference based on the economic aspects. However, social factors such as herding behavior that also affects credit behavior have been largely ignored. It is likely that MSME owners base their credit decision not on their capacity or intention, but they mimic other MSME owners’ credit behavior. Such credit behavior potentially delivers adverse consequences to MSME owners’ ability to manage their credit and even to MSMEs’ business viability. In other words, there is the possibility of the existence of bank credit does not help to solve the problems of MSMEs, but otherwise MSME will face bad credit because the decision to apply bank credit is not accompanied by the consideration of capacity and business development needs. Whereas if access to finance with the ability to manage and innovation will be the key to the international competitiveness of MSMEs (Ahmedova, 2015). Therefore, it is important to analyze the effect of herding on MSME owners’ decisions to apply for bank credits in developing countries including Indonesia whose economic progress relies on MSME growth.

To the best our knowledge, this study can be said to be a pioneer study, given that no previous studies have given herding attention in the context of MSME credit. Studies on herding are dominated by the behavior of stock investors in several countries, such as in Spanish equity market (Ferreula and Blasco, 2008), Portugal (Vieira and Pireira, 2015), Indonesia (Setiyono, 2014; Gunawan et al., 2011), and in India (Bikhchnadani and Sharma, 2000). These papers indicate that herding directly affects investors’ transaction decisions. This study also includes intention as the mediating variable as suggested by the behavioral theories such as the theory of planned behavior (TPB) and theory of interpersonal behavior (TIB). According to such theories a person to perform certain actions, in this context is the decision to apply for bank credit is generally preceded by intentions. Thus, the objective of this study is to examine (a) the effect of herding on credit decision and (b) the effect of herding on credit decision as mediated by the intention factor. The results of this study may be useful for policymaker and financial service industry in understanding the potential effect of herding on MSME credit decision making.

1. Literature Review

Herding is individuals’ tendency to mimic their groups’ actions (Trueman, 1994;
Banerjee, 1992) or the situation when individuals change their principles or actions to fit in with others’ principles and actions (Scharfstein and Stein, 1990). This behavior emerges especially when individuals or groups of individuals are subject to various constraints when making decisions, such as information, time, and ability constraints (Trueman, 1994).

Liu (2015) classifies herding into two categories, namely group herding and reputational herding. Group herding exists when ones tend to follow their groups’ actions without considering the group members’ reputation. In this case, individuals follow others’ behavior although their private information indicates that they have to respond differently to different people (Banerjee, 1992 and Bikhchdanani et al., 1992). Take behavioral finance as examples. Group herding exists when investment managers choose to make investment decisions by following other investment managers’ decisions (Scharfstein and Stein, 1990) and institutional investors mimic investment decisions of other institutional investors with similar classification (Choi and Sias, 2009).

Reputational herding is the situation when ones assume the behavior of other individuals whom they consider to be influential as their reference in making decisions (Dasgupta and Prat, 2008; Welch, 2000). Some individuals believe that following reputable persons’ habit or actions will increase their reputation in the future. It is not uncommon that individuals mimic more successful or well-reputed individuals’ behavior. Graham (1999) reveals that employees’ behaviors often refer to highly reputable managers with high salaries. In a similar vein, Boyson (2010) demonstrates that employees tend to follow well-reputed managers than ill-reputed managers. However, Hirshleifer and Teoh (2003) show that previous empirical studies fail to distinguish whether herding behavior is driven by individual reputation or by simple imitation.

Keynes (1936) observes that individuals’ behaviors are the product of their groups or environment because, as suggested by the animal spirit concept, human beings indirectly copy their groups’ behavior (herding). Previous studies demonstrate that individuals’ decision-making process is affected by their groups’ behavior in various finance-related settings, such as investment recommendation (Scharfstein and Stein, 1990), stock price behavior during IPOs (Welch, 1992), earnings forecast (Trueman, 1994), and capital structure decision (Safithri and Siregar, 2010). We then predict that herding behavior also exist when MSME owners make credit decisions. More specifically, they make credit decisions based on MSME groups’ credit decisions.

H1: The credit behavior of MSME groups positively affects MSME owners’ decisions to apply for credit.
It is not uncommon that individuals consider others’ reputation as the basis for making decisions (Liu, 2015). Choi and Sias (2009) demonstrate that institutional investors that consider reputation to be important prefer to follow investment decisions of other institutional investors with similar classifications than that of other institutional investors with different classifications. In various economic activities such as investment and earnings forecast, the decision-making processes are also affected by well-reputed other individuals (Trueman, 1994). Similarly, we predict that when making credit decisions, MSME owners are affected by credit decisions of other MSME owners whom they consider to be reputable or successful.

H2: The credit behavior of highly reputable other MSME owners positively affects MSME owners’ decisions to apply for credits.

Several behavioral theories establish that behavior – as indicated by the decisions to apply for credits in this study- starts with individual intention. Intention drives individuals to take actions (Passos and Caetano, 2005; Pee et al., 2008; Moody and Siponen, 2013). Malhotra et al. (2005) propose that intention is the product of various factors in the past, including the environmental factor. Manstead (2000), Warburton and Terry (2000) show that the environmental factor influences individual intention. Stronger social groups’ pressures increase individual intention to take actions, including in deciding to apply for credit. Consequently, we predict the credit behavior of MSME groups or other individuals who are considered to be highly reputable in making credit decision affects MSME owners’ decisions to apply for credits.

H3: The credit behavior of MSME groups positively affects MSME owners’ intention to apply for credits.

H4: The credit behavior of highly reputable MSME owners positively affects MSME owners’ intention to apply for credits.

Intention drives individuals to take actions (Davis 1989; Ajzen, 1991). Individuals’ intention to take actions affects their revealed behaviors. However, various studies suggest that besides acting as an independent variable, intention also has a mediating effect on behavior. Even Bagozzi et al. (1989) indicate that the mediating effect of intention on behavior has higher power than the direct effect of intention on behavior.

H5: Intention to apply for credits positively affects MSME owners’ decisions to apply for credits.

H5a: Intention to apply for credits mediates the effect of MSME groups’ credit behavior on MSME owners’ decisions to apply for credits.

H5b: Intention to apply for credits mediates the effect of the credit behavior of highly reputable
other MSME owners on MSME owners' decisions to apply for credits.

2. Research Methodology

This study is based on primary data obtained through field survey method. The sample is MSME owners who are currently having credit or have previously had credit. The expected sample size of 190 is based on Hair et al. (2011) who suggest that the minimum number of sample is ten times the number of indicators. We use 19 indicators in this study. After conducting a field survey in Salatiga city, Indonesia is known to have various types of SMEs such as the food and beverage industry, furniture to textile and textile products obtained 150 samples. The sample size is less than the expected sample size (190) due to various constraints when we conduct our field survey such as the willingness and sincerity of MSME owners to be interviewed.

This study has four variables, namely MSME group’s credit behavior and the credit behavior of reputable other MSME owners as the independent variables, the intention to apply for credits as the intervening variable and MSME owners’ decisions to apply for credits as the dependent variable. For the first variable (MSME groups’ credit behavior), there are three indicators representing this variable: (1) applying for a credit when most of the group members apply for credits, (2) applying for a credit that is recommended by one’s group, and (3) applying for a credit only when most of the group members have no problems with credit repayment. For the credit behavior of reputable other MSME owners, there are also three indicators, namely (1) well-known MSME owners apply for credits, (2) widely known MSME owners apply for credits, and (3) successful MSME owners apply for credits.

We use the indicators of Pee et al. (2008) and Siponen (2013) for the variable of intention to apply for a credit, namely (1) intention to apply for a credit, (2) willingness to apply for a credit, (3) interest to prioritize the use of credit, and (4) plan to continue the use of credit. Lastly, for the variable of MSME owner’s credit decision, the indicators are: (1) use bank credit when in need of additional fund, (2) use bank credit for business development, (3) prioritize the use of bank credit to finance business, and (4) opt to use credit to finance business.

We use the structural equation modeling with partial least square (SEM-PLS) because this statistical technique enables us to test complex research model simultaneously (Smith and Langfield-Smith, 2004). We argue that this advantage fits with our study because this tool manages to handle small sample and multicollinearity between independent variables.

3. Result and Discussion
Ninety-one or 60.7% of the total respondents are male. Senior high school graduates dominate our respondents with the percentage of 39.3%, followed by elementary school graduates with the percentage of 39.3%. Regarding age, most of our respondents (61.4%) are between 36 to 55 years old. Our respondents started their business in various years, ranging from pre-1990 periods to 2017. Further, the largest percentage of our respondents (34.0%) operate in the manufacturing industry sector. Lastly, most of our respondents’ businesses are still micro firms. More specifically, 115 respondents or 76.7% of our respondents’ businesses are micro firms based on their sales turnover.

**Table 1. Descriptive Statistics of Respondents’ Characteristics**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>N</th>
<th>(%)</th>
<th>Characteristics</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a. Sex</strong></td>
<td></td>
<td></td>
<td><strong>d. Year starting business</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>91</td>
<td>60.7%</td>
<td>≤ 1990</td>
<td>33</td>
<td>22.0%</td>
</tr>
<tr>
<td>Female</td>
<td>59</td>
<td>39.3%</td>
<td>1991-2000</td>
<td>33</td>
<td>22.0%</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100.0%</td>
<td>2001-2010</td>
<td>44</td>
<td>29.3%</td>
</tr>
<tr>
<td><strong>b. Highest Education</strong></td>
<td></td>
<td></td>
<td><strong>e. Business Sector</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>45</td>
<td>30.0%</td>
<td>Total</td>
<td>150</td>
<td>100.0%</td>
</tr>
<tr>
<td>Junior secondary</td>
<td>30</td>
<td>20.0%</td>
<td>Agriculture, animal husbandry, forestry, and fishery</td>
<td>34</td>
<td>22.6%</td>
</tr>
<tr>
<td>Senior secondary</td>
<td>59</td>
<td>39.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>4</td>
<td>2.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>12</td>
<td>8%</td>
<td>Electricity, gas, and clean water</td>
<td>1</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100%</td>
<td>Trade, hotel, and restaurant</td>
<td>44</td>
<td>29.3%</td>
</tr>
<tr>
<td><strong>c. Age</strong></td>
<td></td>
<td></td>
<td>Other services</td>
<td>20</td>
<td>13.3%</td>
</tr>
<tr>
<td>≤ 25</td>
<td>7</td>
<td>4.7%</td>
<td>Total</td>
<td>150</td>
<td>100%</td>
</tr>
<tr>
<td>26-35</td>
<td>8</td>
<td>12.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36-45</td>
<td>46</td>
<td>30.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>46-55</td>
<td>46</td>
<td>30.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>56-65</td>
<td>24</td>
<td>16.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>66≤</td>
<td>9</td>
<td>6.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>F. Turnover</strong></td>
<td></td>
<td></td>
<td>Micro</td>
<td>115</td>
<td>76.7%</td>
</tr>
<tr>
<td>Small</td>
<td>32</td>
<td>21.3%</td>
<td>Small</td>
<td>32</td>
<td>21.3%</td>
</tr>
<tr>
<td>Medium</td>
<td>3</td>
<td>2.0%</td>
<td>Medium</td>
<td>3</td>
<td>2.0%</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100.0%</td>
<td>Total</td>
<td>150</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Field Survey, 2017

The data quality test starts with validity and reliability tests. As can be seen in Table 2, the validity test shows that all indicators of each variable have a loading value
above 0.70, indicating that all indicators are valid (Hair et al., 2016). Table 2 also suggests that all variables qualify the convergent validity because all the AVE values are above 0.60 (Hulland, 1999). The discriminant validity test shows the positive correlation between variables. Besides, all four variables exhibit a composite reliability score above 0.70, indicating that all variables are reliable.

### Table 2 Test of Data Quality

<table>
<thead>
<tr>
<th>Latent Variable</th>
<th>AVE</th>
<th>Discriminant Validity</th>
<th>Composite reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Group</td>
<td>Reputation</td>
</tr>
<tr>
<td>Group Behavior</td>
<td>0.603</td>
<td>(0.776)*</td>
<td></td>
</tr>
<tr>
<td>Behavior of Reputable Others</td>
<td>0.725</td>
<td>0.438</td>
<td>(0.852)*</td>
</tr>
<tr>
<td>Intention</td>
<td>0.645</td>
<td>0.384</td>
<td>0.449</td>
</tr>
<tr>
<td>Decision to Apply for a Credit</td>
<td>0.657</td>
<td>0.345</td>
<td>0.374</td>
</tr>
</tbody>
</table>

*Significant at p<0.01

The Goodness of Fit test examines the structural fit of our model with criteria specified by the tests. Table 3 demonstrates that our model fits with criteria. For the Average Path Coefficient (APC) and Average R-squared (ARS) criterion, the research model fits when p-value< 0.001. Meanwhile, for the Average Block VIF (AVIF) criteria, the model fits when the result is less than 5.

### Table 3 Goodness of Fit of Measurement Model

<table>
<thead>
<tr>
<th>Model Fit Criteria</th>
<th>Standard</th>
<th>Results</th>
<th>P-value</th>
<th>Model Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Path Coefficient (APC)</td>
<td>P&lt;0.001</td>
<td>0.331</td>
<td>P&lt;0.001</td>
<td>Fit</td>
</tr>
<tr>
<td>Average R-squared (ARS)</td>
<td>P&lt;0.001</td>
<td>0.602</td>
<td>P&lt;0.001</td>
<td>Fit</td>
</tr>
<tr>
<td>Average Block VIF (AVIF)</td>
<td>AVIF&lt;5</td>
<td>1.451</td>
<td></td>
<td>Fit</td>
</tr>
</tbody>
</table>

*Significant at p<0.01

Table 4 shows that the hypothesis test reveals that there is no effect of the credit behavior of MSME groups on MSME owners’ decisions to apply for credits (coefficient: 0.04; p=0.25, R2=0.86), thus not supporting H1. Similarly, the credit behavior highly reputable MSME owners do not influence MSME owners’ decisions to apply for credit (coefficient: 0.01; p=0.18, R2 =0.86). The results also do not support H2. The results indicate the p-values that are below 0.01, thus supporting H4 and H5. Lastly, the results demonstrate that MSME owners’ intention to apply for credits positively influences their decisions to apply for credits (coefficient: 0.94; p=0.001, R2 =0.86), thus supporting H5.
Table 4 Hypothesis Testing

Panel A. Test of Direct Effects

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Direct effect</th>
<th>t-value</th>
<th>R-square</th>
<th>p-value</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG ---&gt; DC (H1)</td>
<td>0.04</td>
<td>0.11</td>
<td>0.86</td>
<td>0.250</td>
<td>Not Supported</td>
</tr>
<tr>
<td>BR ---&gt; DC (H2)</td>
<td>0.04</td>
<td>0.10</td>
<td>0.86</td>
<td>0.180</td>
<td>Not Supported</td>
</tr>
<tr>
<td>BG ---&gt; IC (H3)</td>
<td>0.17</td>
<td>2.76</td>
<td>0.34</td>
<td>0.001*</td>
<td>Supported</td>
</tr>
<tr>
<td>BR ---&gt; IC (H4)</td>
<td>0.48</td>
<td>5.90</td>
<td>0.34</td>
<td>0.001*</td>
<td>Supported</td>
</tr>
<tr>
<td>IC ---&gt; DC (H5)</td>
<td>0.94</td>
<td>13.33</td>
<td>0.86</td>
<td>0.001*</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Panel B. Test of Indirect Effects

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Indirect effect</th>
<th>p-value</th>
<th>Total Effect</th>
<th>p-value</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG --&gt;IC--&gt; DC (H5a)</td>
<td>0.159</td>
<td>0.006</td>
<td>0.199</td>
<td>0.001*</td>
<td>Supported</td>
</tr>
<tr>
<td>BR --&gt;IC--&gt; DC</td>
<td>0.447</td>
<td>0.001</td>
<td>0.487</td>
<td>0.001*</td>
<td>Supported</td>
</tr>
</tbody>
</table>

BG = The credit behavior of MSME groups, DC = decisions to apply for credit, BR: The credit behavior of highly reputable MSME owners, IC = intention to apply for credit
* p<0.01 (one-tailed)

The test of hypothesis 5a (intention to apply for credits mediates the effect of the credit behavior of MSME groups on MSME owners’ decisions to apply for credits) indicates the indirect effect of 0.159 and p-value of 0.006. The results indicate that intention mediates the effect of the credit behavior of MSME owners on decisions to apply for credits, thus supporting H5a. Similarly, the test of hypothesis 5b (intention mediates the effect of the credit decisions of highly reputable MSME owners on the decisions to apply for credits) shows the indirect effect of 0.447 and p-value of 0.001, thus supporting H5b. The total effects for both H5a and H5b show the p-values of 0.001, suggesting that the mediating effect of intention on behavior is quasi-mediating/partial mediating.

The credit behavior of neither MSME groups nor highly reputable MSME owners does not significantly affect the decisions to apply for credits. Therefore, the results suggest that there is no herding, either group herding or reputational herding, in
decisions to apply for credits. This study is in contrast with Liu (2015) who finds that the behavior of groups and highly reputable other individuals positively affect decision-making. However, the credit behavior of MSME groups and highly reputable MSME owners positively affect the intention to apply for credits.

The indirect tests demonstrate that intention mediates the effects of both the credit behavior of MSME groups and highly reputable MSME owners on the decisions to apply for credits. These findings suggest that the credit behavior of both MSME groups and highly reputable MSME owners do not directly affect the decisions to apply for credits, but they initially affect the intention to apply for credits. The results are in line with Passos and Caetano (2005), Manstead (2000) and Warburton and Terry (2000) who show that environmental factors also affect individual intention or motivation to make decisions. Besides, this study also supports Bagozzi et al., (1989) who indicate the high power of intention as a mediating variable.

4. Conclusions

Our results suggest that the credit behavior of both MSME groups and highly reputable MSME owners significantly affect MSME owners’ decisions to apply for credits. However, there was the effects are not direct ones but mediated by MSME owners’ intention to apply for credits. Thus, the decision of MSME owners to apply for bank credit cannot be separated from the influence of herding behavior. If herding behavior is not supported by financial capacity and the ability of MSME owners to set aside some of their profits to pay loan installments, it is not impossible that MSME owners will face the problem of bad debt. Moreover, if bank credit is not used for business purpose.

The empirical findings of this study have several implications. Although the financial services providers, especially the banking industry, are encouraged by the government and various parties to facilitate MSMEs to access credit the bank must remain prudent in order not to increase the list of non-performing loans. Banks should explore the motives of MSME owners who apply for credit to ensure that credit taking for business interest not only mimics what other MSME owners do. The stakeholders of MSMEs will not only encourage MSMEs to access banking credit either from government credit programs or commercial credit by giving examples of success stories of MSME owners who use credit but they also have to provide guidance on the amount of feasible credit and how to manage bank credit. Policymakers not only create program-specific credits for SMEs that are characterized by soft collateral requirements, low-interest rates and loose administrative requirements but should also be accompanied by designing a monitoring system that ensures the utilization of program credit is targeted and utilized appropriately.
From a theoretical perspective, herding behavior does not only occur in investment decision making especially in the capital market but also financing decisions. For such investment decisions, investors often face high uncertainty and they need to make quick decisions so the possibility of investors in making transaction decisions takes shortcuts by following the decisions of other investors. This can lead to an unfair share price formation. Meanwhile, for financing decisions, MSME owners do not face high uncertainty and have enough time space to make decisions so that decisions can be made more carefully by considering many aspects rather than just following what other MSME owners do.

This study is subject to the following caveats. Firstly, we have not detected whether the herding behavior of MSME owners in applying for credits affects their business performance. Secondly, we do not identify whether the credits are for business or personal consumption purposes. Thirdly, we do not test whether the herding behavior in applying for credits affect MSME owners’ willingness and ability to repay their loans regularly. We advise that future studies emphasize the effect of the herding behavior in credit application on business performance and the ability to repay loans regularly. Further, it is also important to investigate whether MSME owners use their credits for business development or personal consumption purposes.

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