Sustainability of Islamic Rural Banks: A Social *Qardh* Financing Approach

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Abstract: Unlike Islamic commercial banks, Islamic rural bank emphasizes on small-medium enterprise financing along with providing a unique contract feature, namely social *qardh* financing. This paper investigates a way of finding the sustainability of Islamic rural banks through social financing and *halal* small-medium enterprise lending. We use OLS (ordinary least squares) and TSLS (two-stage least square) analysis. The time-series data is used from the period of 2010 to 2020. The result revealed that social *qardh* financing and small-medium *halal* enterprise lending have a positive and significant impact on the sustainability of Islamic rural banks. The Islamic rural banks' ratios are also found to be negative in influencing sustainability except the liquidity ratio that has a significant positive effect. Besides, the macroeconomic variables are also significant in explaining sustainability of Islamic rural banks. Recommendation for the policymaker that the regulation is needed to push Islamic rural banks in enhancing the social *qardh* financing toward small-medium enterprises.

Keywords: *Sustainability, Islamic Rural Banks, Social Finance, and Small-Medium Enterprises.*

Introduction

Islamic finance study has received more attention from scholars worldwide during the last two decades. The courtesy of Islamic finance relies on the prohibition of *riba, maysir,* and *gharar* as the main source of illicit financial transactions. *Riba* is defined as the predetermined return on the use of money by taking an interest in it (Abbasi et al., 1989). According to Sarker et al. (2019), Islamic finance is a financial system that acts under the Islamic law, while the Islamic financial organizations are those who follow Islamic rule in their daily transaction. Islamic finance also has a big concern on equal distribution of wealth, resources, and betterment among all societies, whereas the conventional (capitalism) one focuses on individual accumulation.

One of the most promising growth in the Islamic financial service industry is the Islamic bank. Islamic Financial Service Board (2019) recorded that the global growth of Islamic banks reached more than 7% in 2018 in terms of assets, financing, and deposits. Besides, the Islamic bank has a 71.7% share of the Islamic financial service industry, while the Islamic capital market has a 27% share, and the rest is for Islamic insurance. The big market shares of Islamic banks show that the banks have an important role in the Islamic financial system, both Islamic commercial banks and Islamic rural banks.

Unlike the Islamic commercial bank, the Islamic rural bank emphasizes on micro and small sector financing. In the case of Indonesia, Otoritas Jasa Keuangan (2020) reported that currently, there are 164 units of Islamic rural banks with total assets reaching Rp150 trillion. Islamic rural banks have a big portion for the small and medium enterprises financing. Data in January 2020 shows that the financing of the small and medium enterprises sector is almost 60% compared to financing in other sectors. Apart from focusing on small enterprises, Islamic rural banks also have a unique feature, which is a social financing.

The social financing of Islamic rural bank often uses a *qardh al-hasan* contract. According to Yussof et al. (2015), a *qardh* is loan given to someone for charitable causes which is free from interest or even other profit-sharing instruments. This contract is in line with the prohibition of *riba* as the courtesy of Islamic finance. The main objective of this loan is to help the needy as a welfare distribution mechanism,

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not for a commercial business transaction. Because of this profit-free instrument, the borrower only needs to pay as it was, without any amount of addition.

The unique financing models of Islamic rural banks in Indonesia then raise a fundamental question, whether social *qardh* financing and small-medium lending could make the banks more sustainable. The sustainability often defined as a perfect combination from economy, society, and the environment in order to achieve the need of present generation without disturbing future generation (Aliyu et al., 2017). Banking sustainability offers such a combination among economic improvement of the members, social development and the environmental protection. While the sustainability of the banking sector is well researched, relatively less is known on the Islamic rural banking stability study. However, the sustainability of Islamic banking through institutional, environmental, and social balancing is needed to achieve the ultimate goal of Islamic law (Aliyu et al., 2016).

Thus, our research is conducted in order to answer that question. To the best of our knowledge, the research on Islamic rural bank sustainability is still very exceptional. Our research highlight on social *qardh* finance and small-medium *halal* enterprises, it then enhances the novelty of this research. To meet the goal of this study, our research is divided into five sections; Introduction, Literature Review, Methodology, Results and Discussions, and Conclusion.

Literature Review

Sustainability of Islamic banking can be measure by more than one indicator. Hadi et al. (2018) using ROA to identify bank performance and sustainability. The main objective of their study is to examine the effect of liquidity ratio, non-performing loan, capital adequacy ratio, and risk premium toward bank sustainability. The estimation method used in the study is pooled OLS from 93 commercial bank data in the Middle East, Africa, and India. The result revealed that liquidity and loan growth has a positive and significant relationship with bank performance. In contrast, the capital adequacy ratio and the non-performing loan does not have any significant impact on bank performance.

Another study used Z-score in order to measure banking sustainability and stability (Morgan & Pontines, 2018). The research examined the effect of SMEs lending as a proxy of financial inclusion toward the Z-score of financial stability. Along with the financial stability and financial inclusion variable, the study used GDP, FDI, and trade openness as the control for the macroeconomic variable. The result indicated that an increased share of SMEs lending enhances financial stability. This could be through non-performing loans and probability default reduction. The relationship between SMEs sustainability and bank's risk has been found significant by Shihadeh et al. (2019). The study used a theoretical and empirical approach by analyzing data from 15 banks in Palestine from 2006 to 2016. The result revealed that bank lending to the SME sector has a significant negative impact on their risk, the more lending, the less bank's risk. The practical implication of the study is that policymakers should pay more attention to the SME's growth, especially in providing their need by adopting a guarantee fund from the bank.

Jan et al. (2019) has researched in order to measure how sustainability practices could make an impact on Islamic banking financial performance. The study used the Generalized Method of Moment from the annual data from 2008 to 2018. The result revealed that improvement in sustainability practices would make better value for financial management. The practical implication of the research is that Islamic banking industry practices and policymakers should emphasize achieving sustainability rating, which is measured by general standard disclosure, economic, environmental, and social aspects.

Abrar et al. (2018) used three indicators of Z-score, capital adequacy ratio, and equity to total asset ratio in order to identify the Islamic bank financial stability. The study compared the financial stability between the Islamic bank and conventional banks in Pakistan using the research period from 2012 to 2016. Rodoni et al. (2020) then added that there is no difference between financial stability among Islamic banking in ASEAN. The result showed that overall conventional banks have better financial stability compared to the Islamic banks; by the same token, conventional rural banks are also more stable than the Islamic rural banks.

Islamic rural bank has a similar financing target with the Islamic microfinance institution. According to Moyi (2019), who has researched microfinance institutions, the lending for small businesses does not have a significant impact on credit and insolvency risk. In comparison, the lending by cooperatives to the same target could reduce the insolvency risk. The study used microdata analysis from 2004 to 2014

with the system generalized method of moment (GMM) estimator. This study implies that financing SMEs from microfinance institutions is highly recommended due to the minimum risk of credit insolvency.

Islamic rural bank with a small size of the asset is better in handling financial shock compared to the Islamic commercial bank (Alqahtani & Mayes, 2018). Their research used 76 banks in the Gulf Region during the period 2000 to 2013. The finding indicated that Islamic banks should operate at small financing for SMEs to maintain their stability when they increase the financing scale, their finances become less stable.

The sustainability of microfinance institutions is hard to be identified as there is no clear cut definition and measurement (Rai et al., 2010). Given the difficulty, Xu et al. (2019) then used a set of measurement named hybrid model and improved order preference. The hybrid model considering all the sustainability factors in microfinance institutions such as accounting transparency, good governance, and environmental aspect. In comparison, Arysad (2005) proposed self-sustainability assessment criteria by building a subsidy dependence index. In the case of Islamic microfinance institutions as well as Islamic rural banks, Sari and Cokrohadisimarto (2019) has conducted research using questionnaires to more than 100 Islamic microfinance managers. The result revealed that financing growth and Islamic human capital have a significant impact on Islamic microfinance institutions' sustainability. The study recommends the managers to enhance micro-enterprise funding as well as to increase the spiritual intention of human resources.

Fersi and Boujelbéne (2016) have studied the determinant factor of Islamic and conventional microfinance performance institutions. The performance is divided into three categories, organizational, social, and financial. They used 380 samples from Islamic and conventional microfinance institutions from 1996 to 2012. The results showed that Islamic microfinance institutions' sustainability is affected by social performance indicators, while financial performance indicators influence conventional microfinance institutions. The study discussed how both indicators are measured by capital structure, return on asset, Islamic contract, and quality of credit portfolio.

Some macroeconomics conditions significantly explain the financial performance of Islamic rural banks. Iriani and Yuliadi (2015) studied this phenomenon in Indonesia using inflation, exchange rate, Islamic capital market index, and money supply variables. The study employed a vector error correction model along with unit root and lag length selection. The result indicates that macroeconomic variables have a significant impact on the financial performance of the Islamic rural bank, which is measured by non-performing financing (NPF) indicator. However, the study recommends that Islamic rural banking managers not only pay attention to the external macroeconomics factors but also put an emphasize on the internal organization factors; both are significantly affecting financial performance.

A similar result is explained by Pambuko et al. (2018), which found that Islamic banking stability is much better than the conventional one. They used the banking stability index to measure stability both for Islamic and conventional banks in Indonesia. The result revealed that most of the macroeconomic variables are positively correlating to Islamic banking stability, while the interest rate is responding inversely. The study recommends that the scholars to build a specific Islamic banking stability index as the general index is not appropriate to be used for early warning systems for Islamic banking.

A comprehensive study from Widarjono (2020) is likely close to our research concept. He measures the stability of Islamic banking using Z-score and NPF ratio. Based on financial performance, the study hypothesizes that the Islamic bank's stability is worse than the conventional bank. The instability of the Islamic bank is correlated to the low level of return on asset and high level of non-performing financing. The study investigated Islamic bank stability as the dependent variable and size, CAR, efficiency, inflation, and exchange rate as an independent variable. The findings revealed that size, CAR, and efficiency have a significant positive impact on stability. From the macroeconomics perspective, the study showed that higher inflation and depreciation of the exchange rate lead to an increase in Islamic banking instability.

Methodology

In this study, monthly time series data is used from January 2010 to Mei 2020 from 174 Islamic rural banks in Indonesia. The data is generated from the financial authority services (Otoritas Jasa Keuangan/OJK) monthly report of Islamic rural banks. Hence, the propose of this paper is to analyze

the sustainability of Islamic rural banks through social finance and small-medium halal enterprises. The Z-score is used to measure the sustainability of Islamic rural banks as the dependent variable in this study. We applied this measurement based on Hense (2010), which the equation is as follows:

$$Zscore = \frac{CAR+ROA}{\sigma ROA}.$$ (1)

Where CAR is capital adequacy ratio, ROA is the return on asset, and σROA is the standard deviation of return on asset. For the independent variables, we use the total of *qardh* financing variable and the total of financing toward small-medium enterprises variable as the representation of social finance provided by the Islamic rural banks. Moreover, we add some individual characteristics of Islamic rural banks as control variables such as total assets, non-performing financing, finance to deposit ratio, and liquidity ratio. For the macroeconomics representation, we then use interest rate variable. Ordinary least square model is used to analyze the data. Furthermore, for robustness checks, TSLS (two-stage least square) is applied due to endogeneity issues. The formula is as follows:

$$Zscore = \alpha + \beta QORD_t + \beta FIN\_SME_t + \beta CONTROL_t + \beta MACRO_t + \varepsilon_t$$ (2)

Where $QORD$ represent social financing, FIN_SME is for lending to small-medium *halal* enterprises, $CONTROL$ represent the total asset, non-performing financing, finance to deposit ratio, and liquidity ratio. In comparison, $MACRO$ is for the interest rate representation. All the observed variables and the formulas are summarized in Table 1.

Table 1. Variables and Formula

Variables	Indicators	Formula
Sustainability	*Z-score*	$\frac{CAR+ROA}{\sigma ROA}$
Social Finance	*Qardh*	Log of total financing from the *qardh* contract
Small-Medium *Halal* Enterprises	*FIN_SME*	Log of total financing to SMEs
Size of Islamic Rural Banks	*LN_Asset*	Log of of total asset
Non-Performing Financing	*NPF*	$\frac{Total\ NPL}{Total\ Financing}$
Finance to Deposit Ratio	*FDR*	$\frac{Total\ Financing}{Total\ Deposit}$
Liquidity Ratio	*LQD_Ratio*	$\frac{Capital}{Total\ Asset}$
Interest Rate	*BI_RATE*	Monthly BI 7 days repo rate

Results and Discussions
Results
The present paper uses a monthly time-series dataset from January 2010 to Mei 2020 of Islamic rural banks in Indonesia. The data were extracted from the monthly financial report of Islamic rural banks from the financial service authority (OJK) website (www.ojk.go.id).

The Table 2 showed the descriptive statistic of observed variables. The mean value of the *Z-score* is 62.29055, while the maximum value is 88.704, and the minimum value of the *Z-score* reaches 49.771. Hence, the mean value of *Qardh* is 123014.7, while the maximum value is 236239.4, and the minimum value of *Qardh* is 49908. The mean value of *FIN_SME* reaches 2978360, while the maximum value is 6165312, and the minimum value is 801715.0. The variable *NPF* has a mean value of 8.565, while *NPF* minimum and maximum value are 6.11 and 11.797. While *LN_Asset* has the mean, maximum, and minimum value reach 15.672, 16.466, and 14.576, respectively. The variable *FDR* has the mean, maximum, and minimum value are 123.487, 139.96, and 109,343. The mean value of liquidity ratio is

0.122, maximum value is 0.158 and minimum value is 0.097. Although *BI_RATE* variable has mean, maximum and minimum value of 6.108, 7.75, and 4.25.

Table 2. Descriptive Statistic

|	Mean	Median	Max	Min	Std. Dev
Z-score	62.29055	60.30907	88.70453	49.77114	8.370521
Qardh	123014.7	108523.1	236239.4	49908.00	50409.71
FIN_SME	2978360	3024673	6165312	801715.0	1276465
NPF	8.564691	8.307700	11.79660	6.110000	1.546381
LN_Asset	15.67168	15.72235	16.46560	14.57575	0.548656
FDR	123.4868	124.2100	139.9600	109.3429	7.318781
LQD_Ratio	0.122307	0.122588	0.157854	0.097356	0.014088
BI_RATE	6.108000	6.000000	7.750000	4.250000	1.054147
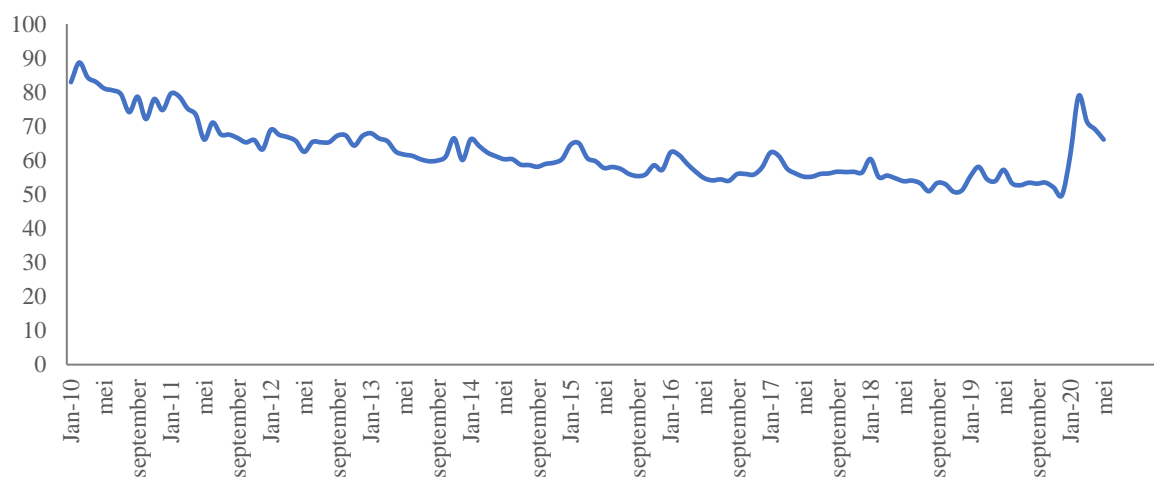
Figure 1. Sustainability of Islamic Rural Banks
Source: Author Calculation

Table 3. Hypotheses Result

Variables	Coefficients	Std. Error	t-statistic	Probability
			$R^2 = 78,24\%$	
Qardh	15,57116	5.938345	2.622138	0.0099***
FIN_SME	11.50290	5.937834	1.937221	0.0551*
NPF	-26.08803	9.977310	-2.614736	0.0101***
LN_Asset	-2.103506	0.422853	-4.974554	0.0000***
FDR	-0.493505	0.123686	-3.989968	0.0001***
LQD_Ratio	437.3340	85.77380	5.098690	0.0000***
BI_RATE	-1.394794	0.574698	-2.427005	0.0167**
C	153.7312	51.45045	2.987946	0.0034

Significant level at ***1%, **5%, *10%; Dependent variable: *Z-score*; Independent variable: Social finance (*Qardh*), lending to SME (*FIN_SME*), non-performing financing (*NPF*), total asset (*LN_ASSET*), finance to deposit ratio (*FDR*), liquidity ratio (*LQD_RATIO*), and interest rate (*BI_RATE*).

Figure 1 described the volatility of the sustainability of Islamic rural banks during the research period. Hence, the time-series data explains the declining trend of sustainability during the research period. The highest value of the *Z-score* appeared at the early period of research then continues to decrease in the following years until the end of 2019. Although, in January 2020, the *Z-score* bounced

back to the higher level of sustainability, even though two months later continues to decline. However, the *Z-score* calculation is accounting based that determined by the capital adequacy and return on asset of Islamic rural banks. The small *Z-score* indicates that Islamic rural banks failed to gain more revenue and vice versa. However, Islamic rural banks are less capitalized.

Table 3 explains the hypotheses result of observed variables. All the variables significantly influence the *Z-score*. *Qardh* variable has positive significant influence on *Z-score* at level 1% (0.0099 < 0.01). While total financing to small-medium enterprises (*FIN_SME*) has a significant positive influence at level 10% of significance (0.0551 < 0.1). Meanwhile, most of the control variables such as nonperforming financing (*NPF*), total asset (*LN_asset*), and finance to deposit ratio (*FDR*) have negative significant influence on *Z-score* at level 1% respectively (0.0101 < 0.01, 0.0000 < 0.01, 0.0001 < 0.01). Even though, liquidity ratio has positive significant influence on *Z-score* at level 1% (0.000 < 0.01). Hence, interest rate (*BI_RATE*) has negative influence on *Z-score* at level 5% (0.0167 < 0.050). The confident value of R^2 is 78.24%, indicates that all the observed variables have influenced the dependent variables about 78.24%, while unobserved variables influence 21.76%.

Discussions

This study attempts to find the sustainability of Islamic rural banks through social finance and small-medium halal enterprises. As mentioned earlier, all observed variables have a significant impact on Z-score as a sustainability indicator. Social finance, which is measured by the *qardh* contract, has a significant positive influence on the sustainability of Islamic rural banks. As a free interest loan, *qardh* drives to customer loyalty and brand image of the company (Assegaf, 2016). Hence, the *qardh* mode of finance suits low-income entrepreneurs (Afonso & Khan, 2019). *Qardh* not only as a capital loan to the need but also creates social value and helps small-medium enterprises to sustain (Aydin, 2015). When the unbanked customer needs a loan to finance their small business, *qardh* can be the alternative way to finance at the first loan (Zauro et al., 2018). While the first loan stabilizes the business, then the second loan would under profitable contracts such as *murabaha, ijarah, mudarabah,* or *musyarakah.* At that stage, the Islamic rural banks would receive the profit at the second loan, and at the same time, it increases sustainability. Besides, Afonso and Khan (2019) suggested that *qardh* mode of financing is funded through a social fund such as *zakah, infaq*, and voluntary donations to maintain the sustainability of financial institutions. Moreover, Aydin (2015) argued that Islamic rural banks not to consider the economic loss at short term loans to apply the *qardh* contract. Thus the reward will be much greater.

Hence, lending to small-medium enterprises has positive significance to increase the Islamic rural banks' sustainability. This result is in line with Morgan and Pontines (2018) and Shihadeh et al. (2019). Small-medium enterprises play a significant role in economic stability, especially after the global financial crisis in 2008. Although small-medium enterprises hardly pay fixed loans due to revenue uncertainty (Mazengera, 2017). The fixed loan issue is the chance for the Islamic rural banks to win the market by lending the credit to SME due to the various product of financing (Shaban et al., 2016). Islamic rural bank lending to small-medium enterprises could expand their business growth, thus, their business ability raises the sustainability of Islamic rural banks (Shihadeh et al., 2019). Also, lending to small-medium enterprises does not influence the insolvency and credit risk of financial institutions (Moyi, 2019).

On the other hand, Islamic rural banks' specific characteristics mostly have a significant negative influence on sustainability, such as finance to deposit ratio, Islamic rural banks' total assets, and non-performing financing. The negative influence of the FDR ratio indicates that Islamic rural banks need to consider more on lending assessment whether the customer has all the required terms and conditions to give the lending or not, including SME or non-SME (Salifu et al., 2018). In comparison, the negative influence of total asset signals the bigger asset of Islamic rural banks, the more diversified the Islamic rural banks of their asset. It assumed that Islamic rural banks prefer to expanse the business, such as opening the new branch office rather than strengthen their lending.

Hence, non-performing financing also has a significant negative influence on sustainability. This occasion points out that the increase of NPF could decrease the sustainability of Islamic rural banks. Then, the prudent assessment of lending is a necessity due to the holding down the non-performing financing. On the opposite, the liquidity ratio has a significant positive influence on the sustainability

of Islamic rural banks. This finding is in line with Hadi et al. (2018). While Ahmad et al. (2016) found that liquidity has a positive influence but not significant. Liquidity is critical for financial institutions, including Islamic rural banks, to sustain. Maintaining the deposit and another source of funds is crucial for Islamic rural banks.

Meanwhile, at the macro level, the sustainability of Islamic rural banks is influenced by bank central interest rates negatively. As a monetary policy, interest rate influences a whole aspect of the financial performance of financial institutions, including Islamic rural banks. This implies that monetary policymakers have to consider when increasing or decreasing interest rate policy.

Robustness Check

In order to anticipate the endogeneity issue of the variable and to gain a more robust result, we adopt a TSLS (two-stage least squares) robustness test. Table 4 explained the result of TSLS. The result revealed that all observed variables are significant. Compared to the previous result on ordinary least square (see Table 3), the value of t-statistic on two-stage least square (see Table 4) is very much similiar. Then, it indicates that the result of this paper is robust, and there is no endogenous issue on the observed variables.

Table 4. Two-Stage Least Square

Variables	Coefficient	Std. Error	t-Statistic	Prob.
			$R^2 = 78,24$	
Qardh	15.57116	5.938345	2.622138	0.0099***
FIN_SME	11.50290	5.937834	1.937221	0.0551*
NPF	-2.103506	0.422853	-4.974554	0.0000***
LN_ASSET	-26.08803	9.977310	-2.614736	0.0101***
FDR	-0.493505	0.123686	-3.989968	0.0001***
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C	153.7312	51.45045	2.987946	0.0034

Significant level at ***1%, **5%, *10%; Dependent variable: *Z-score;* Independent variable: Social finance (*Qardh*), lending to SME (*FIN_SME*), non-performing financing (*NPF*), total asset (*LN_ASSET*), finance to deposit ratio (*FDR*), liquidity ratio (*LQD_RATIO*), and interest rate (*BI_RATE*).

Conclusion

This study aims to measure the sustainability of Islamic rural banks via social finance and small-medium *halal* enterprises. Z-score is identified as the sustainability measurements of Islamic rural banks. At the same time, the *qardh* mode of finance is identified as social financing approach, and the sum of lending extended to small-medium *halal* enterprises as independent variables. Islamic rural banks specific characteristics and macro variables are added in the model to determine the sustainability of Islamic rural banks.

The result found that social finance and lending to small-medium enterprises have a significant positive influence on the sustainability of Islamic rural banks. Hence, Islamic rural bank individual characteristics have influenced the sustainability of Islamic rural banks negatively except liquidity ratio. Moreover, interest rate influences the sustainability of Islamic rural banks negatively. The results are robust regarding the robustness check by TSLS (two-stage least square) and are free from the endogenous issue of the observed variables.

The result suggested that Islamic rural banks need to increase the amount of *qardh* contract and to lend more in small-medium enterprises. *Qardh* is a free interest loan or benevolent loan that is suited for the small entrepreneur to the expanse and to sustain the business. In comparison, small-medium *halal* enterprises are also critical to maintaining the sustainability of economics. It could be concluded that there is a mutual benefit between *qardh* contract, small-medium *halal* enterprises, and sustainability of Islamic rural banks. Furthermore, for policymakers, the regulation is needed to push Islamic rural banks in lending to small-medium enterprises and to enhance the *qardh* contract.

However, the lack of empirical evidence on Islamic rural banks' sustainability and the limited numbers of sustainability literature on Islamic rural banks is our main motivation to conduct this research. Hence, panel data and cross-country analysis is needed for future research to gain a comprehensive point of view.

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