“Corporate green Sukuk issuance for sustainable financing in Indonesia”

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ARTICLE INFO	Endri Endri, Bella Tahya Hania and Amir Ma’ruf (2022). Corporate green Sukuk issuance for sustainable financing in Indonesia. *Environmental Economics*, *13*(1), 38-49. doi:10.21511/ee.13(1).2022.04
DOI	http://dx.doi.org/10.21511/ee.13(1).2022.04
RELEASED ON	Friday, 07 October 2022
RECEIVED ON	Friday, 26 August 2022
ACCEPTED ON	Monday, 03 October 2022

JOURNAL	"Environmental Economics"
ISSN PRINT	1998-6041
ISSN ONLINE	1998-605X
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
44	1	3

BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine

www.businessperspectives.org

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CORPORATE GREEN SUKUK ISSUANCE FOR SUSTAINABLE FINANCING IN INDONESIA

Abstract

Green Sukuk is a source of financing that supports the SDGs. Climate change, the growth of the Islamic finance industry, and the rise of socially responsible investing could make green Sukuk a vital tool for financing clean energy and sustainable infrastructure projects. Many studies have identified its potential and advantages. However, no companies have issued green corporate Sukuk in Indonesia yet. The purpose of this study is to determine the potential and main problems of issuing corporate green Sukuk in Indonesia, along with possible solutions and strategies. The research method used is the analytic network process (ANP). In this study, respondents are experts in the field of green Sukuk (involved experts were from academia, project actors, and regulators). The results of the study indicate that the first destination that has the potential to be financed with green corporate Sukuk is renewable energy. At the same time, the main problem is the lack of understanding from market participants. In terms of solutions, the incentive provided by the government is the best to encourage the issuance of green corporate Sukuk. Moreover, the first strategy is to issue green corporate Sukuk with ijarah contracts. From the research results, it is hoped that the Indonesian government can be more aggressive in providing incentives to green project actors.

Keywords renewable energy, ijarah contracts, green project, analytic network process (ANP), Sukuk

JEL Classification G23, G32, O13, Q28

Received on: 26th of August, 2022
Accepted on: 3rd of October, 2022
Published on: 7th of October, 2022

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Conflict of interest statement:
Author(s) reported no conflict of interest

INTRODUCTION

Green Sukuk is one of the Islamic financial instruments that encourage the realization of the Sustainable Development Goals (SDGs). It can also be a breakthrough in overcoming problems related to climate change (Santoso, 2020). Indonesia is one of the countries that are highly committed to fighting climate change. Therefore, green Sukuk issuance in Indonesia has the potential to proliferate, including:

1) increasing demand for energy supply;
2) increasing energy financing;
3) investor awareness of socially responsible investment;
4) largest Muslim population in the world;
5) forecasting high economic growth; and
6) supporting infrastructure development (Karina, 2019).

Since 2018, the Government of Indonesia has successfully entered the market and issued global green Sukuk with a total value of USD 5 billion (Azhgaliyeva et al., 2020). The issuance of green Sukuk in 2022 scored the largest tranche ever globally. However, many companies in Indonesia are still not willing to issue green corporate Sukuk.

The low willingness of companies to issue green Sukuk is caused by several inhibiting factors: a higher risk profile, poor green taxonomy, time-consuming and higher costs, less attractive benefits, and prob-

http://dx.doi.org/10.21511/ee.13(1).2022.04

lems in identifying green assets (Keshminder et al., 2022). Furthermore, other challenges corporations face include a legal and regulatory framework that has not been expressly regulated (Liu & Lai, 2021). Moreover, there is a limited understanding of market players on environmental-based sharia capital market products and a lack of socialization of sharia investment product innovations, especially environmental-based sharia bonds and sustainable development (Karina, 2019). Finally, the condition of the secondary market is not sufficiently liquid (Hasanah, 2018).

From the phenomenon of existing corporate Sukuk, it can be illustrated the more significant challenges in facing the issuance of corporate green Sukuk (Nurhayati et al., 2021; Shahnia et al., 2020). However, it cannot be denied that the embedding of 'green' creates a different image to attract more attention from various groups. The condition of the world that continues to experience climate change and global warming has become an open secret. Thus, individuals who are starting to look at programs related to environmental problems appear. Seeing the urgency of the need for funds for environmentally friendly projects, green Sukuk may be more attractive than ordinary Sukuk. This can signal investors to support the improvement of the earth while still getting a yield or profit from the investment. From the above follows the determination of the potential of corporate issuance of green Sukuk in Indonesia as a reaction to the lack of interest of corporations in Indonesia to issue green Sukuk.

1. LITERATURE REVIEW

Several previous studies that have discussed green Sukuk using different methods have produced various research results. Support for the presence of green Sukuk was evidenced. The potential for issuing corporate green Sukuk benefits the climate and sustainability, as noted by Liu and Lai (2021), Hariyani and Kusuma (2020), Suherman et al. (2019), and Morea and Poggi (2017). The trend of a rapid increase in the issuance of corporate green Sukuk is spread in countries. The Malaysian government is taking a more progressive approach to supporting a green Sukuk environment by creating guidelines, frameworks, policies, and incentives (Abdullah & Keshminder, 2022). In Indonesia, green Sukuk can be a source of financing for sustainable waste management (Hariyani & Kusuma, 2020). Mat Rahim and Mohamad (2018) and Morea and Poggi (2017) recommended issuing green Sukuk to finance renewable projects. Green Sukuk can also be used as investment financing for producing renewable energy sources (Dinçer et al., 2019).

Liu and Lai (2021) showed that green Sukuk did play a role in supporting sustainable development. Several other studies discuss corporate green investment and sustainable financing and show that green investments can provide additional benefits for companies (Pratanjana & Simbolon, 2020; Taghizadeh-Hesary et al., 2021). Pratanjana and Simbolon (2020) also conducted a study to see the potential of issuing green bonds for the sustainable development of peatlands carried out by PT. Sarana Multi Infrastuktur. Using the vertical common size analysis method, the results show that the fair price of green bonds issued by PT SMI continues to increase. In addition, the risk contained in green bonds is lower than in ordinary bonds.

Morea and Poggi (2017) conducted research on using green Sukuk as an instrument for financing wind energy in Italy. The results prove that to fight climate change and greenhouse emissions, incentives and the use of sharia-compliant green Sukuk instruments provide a viable and sustainable investment for the wind energy sector in Italy. Furthermore, the potential of issuing green Sukuk in Indonesia has an impact on increasing investor awareness of the importance of environmental conservation and being motivated to finance renewable energy projects (Fitrah & Soemitra, 2022).

Jain et al. (2022) critically reviewed various literature to describe the benefits and challenges for companies in issuing green bonds. The results show that most of the literature recommends issuing green bonds by adjusting the five necessary driving steps: reputational benefits, legislation, stakeholder pressure, internal legitimacy, and personal motives. Green bonds are a mutually beneficial solution for issuers and investors on the

condition that green bonds must finance 'green projects,' which are usually related to renewable energy and emission reductions. In addition, the increasing demand for green bonds or green investment globally will encourage more favorable conditions and better prices for issuers compared to other products (Chiesa & Barua, 2019).

Mat Rahim and Mohamad (2018) reviewed the application of green Sukuk for financing renewable energy in several companies in Malaysia. The results show that green Sukuk, in addition to reducing the tax budget, helps to overcome many environmental problems and improve water quality. Brahim (2018) analyzed how green Sukuk can promote sustainable development. It was found that it has the potential to channel global capital and become an instrument that can finance renewable projects and climate change. Moreover, Aassouli et al. (2018) noted that green Sukuk could bridge the financing gap for clean energy projects.

The use of green bonds as a financing instrument to achieve the goals of the Paris Agreement was analyzed by Cortellini and Panetta (2021). Corporate green bonds effectively increase the company's environmental footprint and performance. The study concludes that corporate green bonds bring many benefits to companies and the environment. In addition, they are a powerful instrument to be used by the private sector as an environmental financing instrument. While in Indonesia, Abubakar and Handayani (2020) analyzed alternative financing schemes for renewable energy power plant development projects. The result is that alternative financing that can be used is zakat and green Sukuk. Green Sukuk is a good investment opportunity. Funds obtained from green Sukuk are allocated to finance renewable energy projects, including power plants.

Azhgaliyeva et al. (2020) analyzed the issuance of green bonds for financing renewable energy projects in terms of policies in ASEAN countries. The results show that the existing green bond policies are effective in encouraging the issuance of green bonds. However, this does not mean green bond policies effectively promote renewable energy projects in ASEAN. Proceeds from green bonds in ASEAN are used to finance projects abroad, so they do not promote green investment in ASEAN. Kung et al. (2022) analyzed green bonds as a source of financing for renewable energy projects. They tried identifying the barriers for developing countries using this green investment instrument. The results are the lack of proper institutional arrangements to manage green bonds and the issuance of a minimum volume with high transaction costs; these are the main obstacles to developing green bonds. However, with the proper steps, various countries can optimize the benefits of the green bond. These steps include efficient coordination between the ministry of finance and the ministry of the environment, efficient use of national and multilateral state banks to manage green bonds and to provide guarantees to local governments to promote local markets so that domestic investors will be interested in issuing green bonds in local currencies. Government assistance and policies are vital in developing green bonds for developing countries.

Kapoor et al. (2021) researched the viability of green bonds as a financing mechanism for energy-efficient environmentally friendly buildings in ASEAN. The results indicate that green bonds have great potential as a financing mechanism and are considered essential to be used as financing instruments for environmentally friendly buildings in ASEAN. This instrument can also support overcoming the lack of investment in environmentally friendly buildings. Niyazbekova et al. (2021) discussed using green bonds as a green project financing instrument. The results found that one of the obstacles in developing green bonds is the certification that is difficult to obtain.

The green bond market to facilitate green finance after the COVID-19 pandemic, focusing on Asia and the Pacific, was analyzed by Taghizadeh-Hesary et al. (2021). Using the pooled ordinary least squares method and the generalized least squares random effects estimator, the results prove that green bonds in Asia, whose market is dominated by banks, can provide higher returns, higher risks, and higher heterogeneity. Prakash and Sethi (2022) discussed the financial situation with the aim of sustainable development in Asia. They identified the financial instruments that can attract private investment for sustainable development in the region. The results show that although interest in sustainability is growing in Asia, finan-

http://dx.doi.org/10.21511/ee.13(1).2022.04

cial markets have not yet taken advantage of this interest by opening up sustainable investment opportunities. Then to increase the interest of private investors, the Asian economy must ensure the availability of information, reduce distortions, and ease regulatory obstacles.

Meanwhile, Fatica and Panzica (2021) examined whether green bond practices are directly related to emission reductions. The study is quantitative research with the finding that compared to conventional bonds, green bonds show a more significant and long-lasting emission reduction. This emission reduction is also seen to be greater when using green bonds by the Paris Agreement (Fatica & Panzica, 2021). Alam et al. (2016) examined the possibility of green Sukuk to finance projects developed by the Alternative Energy Development Board in Pakistan. The study concludes that one of the challenges of green Sukuk is that this instrument can expose a higher risk profile when compared to other instruments because it involves new technology. However, green Sukuk can still be used as additional instruments in Islamic finance.

Many studies have discussed the topic of green Sukuk in various countries. However, research that discusses corporate green Sukuk in Indonesia is still scarce, so the investigation regarding the issuance of green corporate Sukuk in Indonesia is worthy of being raised. Therefore, this paper explores the potential of issuing green Sukuk by corporations to support sustainable financing in Indonesia by looking at the aspects, problems, solutions, and strategies.

2. METHODOLOGY

This study is qualitative research using the analytic network process (ANP) method. ANP is a theory to measure the relative decrease in the priority ratio of the individual ratio scale that reflects the relative measurement of the influence of each interacting element related to the control criteria (Niemira & Saaty, 2004). ANP is a non-parametric and non-bayesian qualitative approach used to make decisions and treat those decisions without making assumptions regarding the independence of elements at each level, both higher and lower (Sinuany-Stern et al., 2000).

The population in this study are experts in corporate green Sukuk and sustainable finance. Next, purposive sampling is used to determine the final sample in the study (Mulyana et al., 2022). Purposive sampling is a sampling technique with specific considerations and conditions. The requirement for determining the samples in this study is that they must be experts and masters in the field of corporate green Sukuk. Thus, they are directly involved in Islamic capital markets, especially green Sukuk. According to the ANP method, the number of experts used is not a criterion of validity. The number of respondents is not the most important thing, but the competence and expertise of the respondents take precedence (Endri, 2009).

Various studies employing the ANP method used different numbers of experts. For example, Chung et al. (2016) selected 12 experts, Guo et al. (2020) used 10 experts, Liu et al. (2020) chose 9 experts, and Hariyani and Kusuma (2020) used 3 experts. This study selects 5 experts, as done by Endri (2009) and Dewi et al. (2020), who discussed issues related to corporate Sukuk issuance in Indonesia. 5 is considered the correct number because it is not too little or too much. At the same time, the odd value is used to avoid the answer of the same weight if the respondent is faced with two choices.

Endri (2009) divided the analysis using the ANP method into 3 stages: model construction, model quantification, and analysis of the results. In this study, model construction was compiled from the literature review results and then results of the literature review were validated to obtain accurate data. After validating the results, the ANP model is compiled as a framework.

The model quantification stage is completed by compiling and submitting a questionnaire to the experts in pairwise comparison between elements and clusters to determine which element has a more significant and dominant influence. Moreover, it shows how big the difference is using a numerical scale of 1-9 with the following guidelines. Number 1 means that each variable is equally essential. Number 3 means that one of the variables has slightly more critical importance. Number 5 means that one of the variables has more substantial importance. Number 7 means

that one of the variables has extreme importance. Number 9 means that one of the variables is the most significant. Numbers 2, 4, 6, and 8 are intermediate between odd values (Saaty, 2006).

In the last stage, all the results of ANP network processing are combined. Then the data are processed by calculating the geometric mean and rater agreement. Next, add up the agreement value between respondents is done by calculating the value of Kendall's coefficient of concordance. Finally, the results are interpreted in the geometric mean of all respondents.

3. RESULTS

Respondents in this study consisted of five informants who were considered experts in research problems. Research variables were obtained and used in this study based on the literature review and interviews with the respondents (Table 1). After validating, these variables were entered into the ANP feedback network (Appendix A, Figure A1).

Table 1. Factors and criteria for issuance of corporate green Sukuk in Indonesia for sustainable financing

	Criteria	
Potency	Green building	
	Sustainable Agriculture	
	Green Tourism	
	Green Transportation	
	Renewable Energy	
Aspect	**Problem**	**Solution**
Market Players	Lack of Understanding and Awareness	Socialization and Education
	An Industry That Labels Itself As 'Green'	Company Supervision
		Truly 'Green' Project Evaluation and Selection
Product Characteristics	Limited Contract Variations	Socialization of Corporate Sukuk Contracts
	Expensive Administration Fee	Global Promotion
Regulation	No Standard Rules Yet	Revision of Laws and Regulations
Government	Incentive	Incentive Push
	Criteria	
Strategy	Green Sukuk Wakalah	
	Green ijarah Sukuk	
	Hybrid Green Sukuk	

The results of data processing using Super Decision software and Microsoft Excel are shown in Table 2.

Table 2. Super decision processing results

Potential (objective)	GM	Rank
Renewable Energy	0.058008	1
Green Transportation	0.041682	2
Green Building	0.029920	3
Green Tourism	0.029899	4
Sustainable Agriculture	0.029233	5
Aspect		
Government	0.057522	1
Regulation	0.056005	2
Market Players	0.045314	3
Product Characteristics	0.034492	4
Problem		
Lack of Understanding	0.039126	1
Incentive	0.032528	2
No Standard Rules yet	0.029993	3
A Project that labels itself as a 'Green Project'	0.026904	4
Expensive Administration Fee	0.023365	5
Limited Contract Variations	0.018922	6
Solution		
Incentive Push	0.049483	1
Socialization and Education	0.032531	2
Revision of Laws and Regulations	0.025531	3
Socialization of Corporate Sukuk Contracts	0.021965	4
Truly Green Project Evaluation and Selection	0.021176	5
Global Promotion	0.017134	6
Company Supervision	0.017078	7
Strategy		
Green Sukuk Ijarah	0.070984	1
Green Sukuk Wakalah	0.064122	2
Hybrid Green Sukuk	0.056282	3

Considering the potential purpose of issuing corporate green Sukuk, the geometric mean values were obtained from several elements, namely the green building with 0.029920, sustainable agriculture with 0.029233, green tourism with 0.029899, green transportation with 0.041682, and renewable energy with 0.058008. Thus, renewable energy has the most considerable mean geometric value, followed by green transportation. As a result, renewable energy is the goal with the most potential to be developed in Indonesia with financing from corporate green Sukuk.

Regarding the aspects of the issuance of corporate green Sukuk, the value of each aspect for the market participant is 0.045314, product characteristics is 0.034492, regulation is 0.056005, and the gov-

http://dx.doi.org/10.21511/ee.13(1).2022.04

ernment is 0.057522. Therefore, the priority aspect in issuing corporate green Sukuk is the government, followed by regulation.

From the aspect of market participants, the mean geometric value of a lack of understanding is 0.039126, while for a project that labels itself as a 'green' project, it is 0.026904. Thus, it is found that the lack of understanding is a priority problem.

Considering product characteristics, the geometric mean value of the limited contract variation is 0.018922, and of the high administrative cost is 0.023365. Therefore, between these two criteria, the limited variety of contracts is a priority problem. From the regulatory aspect, the problem is that there is no standard regulation with a mean geometric value of 0.029993. Moreover, from the government aspect, the problem is the absence of incentives, 0.032528. Among all the problems, the lack of understanding of market participants is a priority problem in the issuance of green corporate Sukuk, followed by the absence of incentives from the government. Finally, it is concluded that there is no standard regulation.

In terms of solutions, it was found that the incentive solution from the government occupies the highest priority with a value of 0.049483, followed by socialization and education with a value of 0.03253. Furthermore, in the third position, there is a revision of laws and regulations with a value of 0.032531. The fourth position and sequentially are socialization of corporate Sukuk contracts with a value of 0.021965, evaluation and selection of projects with a value of 0.021176, global promotions with a value of 0.017134, and the last is corporate supervision with a value of 0.07078.

Meanwhile, the best corporate green Sukuk issuance strategy is the issuance of corporate green Sukuk using the Green Sukuk Ijarah contract, which occupies the highest position with a value of 0.070984. It is followed by Green Sukuk Wakalah with a value of 0.064122 and finally Hybrid Green Sukuk with a value of 0.056282. The answers to the questionnaires were submitted to all respondents, and then the rater agreement value was calculated. Kendall's concordance coefficient is a tool used in determining rater agreements.

Table 3. P-value of the rater agreement

Cluster	Rater Agreement	P-value
Potency	0.293164200	0.2095936
Aspect	0.116504854	0.6264096
Problem	0.125283019	0.6796320
Solution	0.210764675	0.3880030
Strategy	0.065420561	0.7210096

Table 3 shows that the value of W, which is between $0 < W < 1$, means that none of the respondents' answers totally disagree or unanimously agree. The p-value of all clusters is above 1%, 5%, or 10%, meaning no significant agreement among all respondents in each cluster.

4. DISCUSSION

It was found that renewable energy potential is a priority goal. Renewable energy is an ideal project to be financed using the green Sukuk instrument. The purpose of using green Sukuk for renewable energy projects can attract investors who tend to focus on the environment. Of course, a good application of signaling theory is needed to inform investors. According to Clapp et al. (2016) classification, renewable energy is included in the dark green category, which is a project with a long-term vision of a future that is low in carbon and supports climate resilience.

The potential of renewable energy is also in line with Aassouli et al. (2018), Hariyani and Kusuma (2020), Abolhosseini and Heshmati (2014), Morea and Poggi (2017), Sitompul et al. (2022), and Wang et al. (2022). Not only in Indonesia, but renewable energy is also almost suitable for use in various other countries because the main ingredient is a natural energy that can be renewed without depleting the earth's resources, which may damage the earth's condition. Renewable energy, of course, is very likely to overcome the problem of climate change, which has now become a big issue in all countries.

Looking at the condition of the earth, which temperature always increase and the climate change

every year, it is not surprising that the potential for green transportation is the second priority after renewable energy. Moreover, transportation pollution is also the most significant contributor to climate change. In addition, the increasing number of people in Indonesia makes the addition of private transportation due to the lack of public transportation, which triggers more pollution. Therefore, green transport has a good chance of tackling this. Besides reducing pollution and global warming, green transportation will also reduce costs and congestion in Indonesia. Thus, with the help of regulations from the government, green transportation will have the potential to be financed with green corporate Sukuk. In the CICERO classification, green transportation is in the second stage, "medium to dark," where these projects are long-term steps and visions but are not sufficient to achieve them.

Meanwhile, in terms of problems, the priority problem in the issuance of corporate green Sukuk is the lack of understanding of market players regarding Sukuk products in general and the advantages of Sukuk and green Sukuk in particular. In terms of publishers or companies, many still do not understand green Sukuk products until the steps for issuing them. The state of a company without green Sukuk, which is still fine, makes the company not glance or try to find out about green Sukuk in depth. Not to mention knowing the problems related to the Sukuk product itself makes a company less interested in knowing more about green Sukuk. In line with the findings, understanding green Sukuk is a crucial problem in Indonesia, both in terms of publishers, companies, and even regulators. This lack of understanding will impact the success of issuing corporate green Sukuk.

The second priority is from the government aspect, namely the absence of incentives from the government for green Sukuk issuing companies. Companies are reluctant to issue corporate green Sukuk because the costs incurred are quite high. Therefore, no assistance from the government makes companies even more reluctant and less motivated. Therefore, incentives from the government will significantly help overcome the high costs of green Sukuk so that companies will be more motivated.

The third priority problem is that no standard regulation manages the issuance of green Sukuk among corporations, making corporations reluctant to issue green Sukuk. An example is the obligation to have an SPV in the issuance of green Sukuk. Meanwhile, in Indonesia, there are no regulations governing the establishment of SPV. Therefore, if a company wants to establish an SPV, it must choose what form of SPV is, whether it is a foundation, institution, firm, and so on, which is permanent. At the same time, SPV is needed only to issue Sukuk, whichever age is the same as the Sukuk itself. Although it can make other companies as SPV, this problem will return to the problem of the costs required being quite expensive.

In terms of solutions, incentives are the primary solution in issuing corporate green Sukuk from the government aspect. Although the incentive is not the priority in the problem cluster, the incentive becomes the first solution in the solution cluster. This shows that incentives from the government can be beneficial and can motivate companies to learn and understand green corporate Sukuk. They will also certainly help in overcoming the problem of expensive green Sukuk issuance costs. The second solution is socialization and education. Looking at the previous results regarding the priority of the first problem, the second priority solution is more widespread. It requires deeper socialization and education for all market participants, both in terms of companies and investors. In carrying out this approach, the integrity of many parties is needed, both in terms of regulators, government, and academics. It is hoped that with a good understanding by market participants, the green Sukuk market will deepen and continue to grow so that the green Sukuk instrument can be helpful to overcome environmental problems and get investment benefits.

Revision of regulations is the next priority. The regulators are expected to revise and strengthen all laws and regulations regarding corporate green Sukuk. However, a good and correct regulatory revision will work well if stakeholders or regulators have a good understanding of the green corporate Sukuk, considering the main problem with the issuance of green corporate Sukuk is the lack of understanding, which also includes the regulators' understanding. Seeing that the socialization

http://dx.doi.org/10.21511/ee.13(1).2022.04

solution is the second priority even though the problem of understanding is the top priority, the incentive solution is the priority even though the incentive problem is the second priority. Thus, it can be concluded that cost is also again a solution to overcome the main problem. This is because support costs are still needed to carry out socialization and education.

Meanwhile, in terms of strategy, it was found that issuing green Sukuk with the ijarah system is a strategic priority. In an ijarah agreement, the assets owned by a company are sold to SPV, which is the institution that issues Sukuk and raises funds from investors. Then a company will lease the assets sold during the contract until maturity and buy back the assets from the SPV. As noted by Aassouli et al. (2018) and Jobst et al. (2008), in Indonesia and the international arena, the ijarah contract is one of the contracts that dominates the issuance of Sukuk (both sovereign and corporate). One reason is that the ijarah contract scheme is considered a contract that is easily understood by investors even if they are still unfamiliar with contracts in Islamic transactions (Suryadi et al., 2021).

This finding contradicts Aassouli et al. (2018), who claimed that the hybrid green Sukuk is a suitable contract to finance large projects. However, the hybrid green Sukuk was ishtisna-ijarah, which still uses the ijarah contract. This also strengthens the priority of answers from respondents that the ijarah contract is a very suitable contract to be used in the issuance of corporate green Sukuk. In Indonesia, ijarah contracts are still the leading type of contracts used to issue Sukuk, either by companies or the government.

CONCLUSION

This study aims to investigate the causes of the disparity between the large potential for issuance of corporate green Sukuk in Indonesia and the low interest of corporations in issuing green Sukuk. By reviewing the literature and with the help of interviews and questionnaires addressed to experts in related fields, this paper concludes that renewable energy is a significant goal with great potential to be developed in Indonesia with funding sources from corporate green Sukuk. Meanwhile, the main problem that must be addressed immediately is the lack of understanding of market players regarding corporate green Sukuk.

However, the leading solution to overcome the problem of issuing corporate green Sukuk is incentives from the government. At the same time, the best strategy is to issue corporate green Sukuk using an ijarah contract because this contract is considered the most easily understood and applied by all aspects.

Thus, from the results of this study, it is hoped that the Indonesian government can encourage the presence of corporate green Sukuk by providing incentive assistance such as tax reductions for green projects. Moreover, the government can collaborate with regulators to educate the market participants regarding corporate green Sukuk. Meanwhile, companies can consider issuing corporate green Sukuk with ijarah contracts due to the ease of their implications.

AUTHOR CONTRIBUTIONS

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Funding acquisition: Endri Endri, Bella Tahya Hania.
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REFERENCES

1. Aassouli, D., Asutay, M., Mohieldin, M., & Nwokike, T. C. (2018). *Green Sukuk, Energy Poverty, and Climate Change: A Roadmap for Sub-Saharan Africa* (Policy Research Working Paper No. 8680). Washington, DC: World Bank. https://doi.org/10.1596/1813-9450-8680
2. Abdullah, M. S., & Keshminder, J. S. (2022). What drives green Sukuk? A leader's perspective. *Journal of Sustainable Finance & Investment, 12*(3), 985-1005. https://doi.org/10.1080/20430795.2020.1821339
3. Abolhosseini, S., & Heshmati, A. (2014). The main support mechanisms to finance renewable energy development. *Renewable and Sustainable Energy Reviews, 40,* 876-885. https://doi.org/10.1016/j.rser.2014.08.013
4. Abubakar, L., & Handayani, T. (2020). Green Sukuk: sustainable financing instruments for infrastructure development in Indonesia. *1st Borobudur International Symposium on Humanities, Economics and Social Sciences (BIS-HESS 2019)* (pp. 983-987). Atlantis Press. https://doi.org/10.2991/assehr.k.200529.206
5. Alam, N., Duygun, M., & Ariss, R. T. (2016). Green Sukuk: An Innovation in Islamic Capital Markets. In A. Dorsman, Ö. Arslan-Ayaydin, and M. Karan (Eds.), *Energy and Finance* (pp. 167-185). Springer, Cham. http://dx.doi.org/10.1007/978-3-319-32268-1_10
6. Azhgaliyeva, D., Kapoor, A., & Liu, Y. (2020). Green bonds for financing renewable energy and energy efficiency in South-East Asia: a review of policies. *Journal of Sustainable Finance & Investment, 10*(2), 113-140. https://doi.org/10.1080/20430795.2019.1704160
7. Brahim, C. T. (2018). The Role of green Islamic Sukuk to the promotion of sustainable development objectives. *Journal of the New Economy, 1*(20), 186-207. Retrieved from https://www.asjp.cerist.dz/en/downArticle/296/9/3/60503
8. Chiesa, M., & Barua, S. (2019). The surge of impact borrowing: The magnitude and determinants of green bond supply and its heterogeneity across markets. *Journal of Sustainable Finance & Investment, 9*(2), 138-161. https://doi.org/10.1080/20430795.2018.1550993
9. Chung, C. C., Chao, L. C., & Lou, S. J. (2016). The Establishment Of a Green Supplier Selection and Guidance Mechanism with The ANP and IPA. *Sustainability, 8*(3), 259. https://doi.org/10.3390/su8030259
10. Clapp, C., Alfsen, K. H., Lund, H. L., & Pillay, K. (2016). Green Bonds and Environmentally Integrity*: Insight from CICERO Second Opinions.* CICERO Center for International Climate and Environmental Research. Retrieved from https://core.ac.uk/download/pdf/154672377.pdf
11. Cortellini, G., & Panetta, I. C. (2021). Green Bond: A Systematic Literature Review for Future Research Agendas. *Journal of Risk and Financial Management, 14*(12), 589. https://doi.org/10.3390/jrfm14120589
12. Dewi, D. M., Nugroho, L., Sukmadilaga, C., & Fitijanti, T. (2020). Tinjauan Sukuk Korporasi di Indonesia dari Perspektif Penawaran, Permintaan dan Regulasi. *Journal of Business and Economics Research (JBE), 1*(1), 11-16. Retrieved from http://ejurnal.seminar-id.com/index.php/jbe/article/view/57
13. Dinçer, H., Yüksel, S., & Martinez, L. (2019). Balanced scorecard-based analysis about European energy investment policies: A hybrid hesitant fuzzy decision-making approach with quality function deployment. *Expert Systems with Applications, 115,* 152-171. https://doi.org/10.1016/j.eswa.2018.07.072
14. Endri, E. (2009). Permasalahan Pengembangan Sukuk Korporasi di Indonesia Menggunakan Metode Analytical Network Process (ANP). *Jurnal Keuangan Dan Perbankan, 13*(3), 359-372. (In Indonesian). Retrieved from http://jurnal.unmer.ac.id/index.php/jkdp/article/view/1085
15. Fatica, S., & Panzica, R. (2021). Green bonds as a tool against climate change. *Business Strategy and the Environment, 30*(5), 2688-2701. https://doi.org/10.1002/bse.2771
16. Fitrah, R., & Soemitra, A. (2022). Green Sukuk For Sustainable Development Goals in Indonesia: A Literature Study. *Jurnal Ilmiah Ekonomi Islam, 8*(1), 231-240. http://dx.doi.org/10.29040/jiei.v8i1.4591
17. Guo, H., Qiao, W., & Zheng, Y. (2020). Effectiveness Evaluation of Financing Platform Operation of Buildings Energy Saving Transformation Using ANP-Fuzzy in China: An Empirical Study. *Sustainability, 12*(7), 2826. https://doi.org/10.3390/su12072826

http://dx.doi.org/10.21511/ee.13(1).2022.04

18. Hariyani, H. F., & Kusuma, H. (2020). Green Sukuk-Based Project on Sustainable Waste Management in Indonesia. *Al-Iqtishad: Jurnal Ilmu Ekonomi Syariah, 12*(2), 165-178. https://doi.org/10.15408/aiq.v12i2.15129

19. Hasanah, M. (2018). Implikasi Penerbitan Sukuk terhadap Kinerja Keuangan dan Kesejahteraan Karyawan (Studi pada Bank Muamalat Indonesia). *Indonesian Journal of Islamic Economics and Finance, 1*(1), 14-31. (In Indonesian). Retrieved from http://jurnalpasca.iain-jember.ac.id/ejournal/index.php/IJIEF/article/view/24

20. Jain, K., Gangopadhyay, M., & Mukhopadhyay, K. (2022). Prospects and challenges of green bonds in the renewable energy sector: the case of selected Asian economies. *Journal of Sustainable Finance & Investment*, 1-24. https://doi.org/10.1080/20430795.2022.2034596

21. Jobst, A., Kunzel, P., Mills, P., & Sy, A. (2008). Islamic bond issuance: what sovereign debt managers need to know. *International Journal of Islamic and Middle Eastern Finance and Management, 1*(4), 330-344. https://doi.org/10.1108/17538390810919637

22. Kapoor, A., Teo, E.-Q., Azhgaliyeva, D., & Liu, Y. (2021). The Viability of Green Bonds as a Financing Mechanism for Energy-Efficient Green Buildings in ASEAN: Lessons from Malaysia and Singapore. In Y. Liu, F. Taghizadeh-Hesary, & N. Yoshino (Eds.), *Energy Efficiency Financing and Market-Based Instruments* (pp. 263-286). Springer Singapore. https://doi.org/10.1007/978-981-16-3599-1_12

23. Karina, L. A. (2019). Peluang dan Tantangan Perkembangan Green Sukuk di Indonesia. *Conference on Islamic Management, Accounting, and Economics (CIMAE) Proceeding, 2* (pp. 259-265). (In Indonesian). Retrieved from https://journal.uii.ac.id/CIMAE/article/view/14165/9772

24. Keshminder, J. S., Abdullah, M. S., & Mardi, M. (2022). Green Sukuk – Malaysia surviving the bumpy road: performance, challenges, and reconciled issuance framework. *Qualitative Research in Financial Markets, 14*(1), 76-94. https://doi.org/10.1108/QRFM-04-2021-0049

25. Kung, C.-C., Lan, X., Yang, Y., Kung, S.-S., & Chang, M.-S. (2022). Effects of green bonds on Taiwan's bioenergy development. *Energy, 238*(Part A), 121567. https://doi.org/10.1016/j.energy.2021.121567

26. Liu, F. H., & Lai, K. P. (2021). Ecologies of green finance: Green Sukuk and development of green Islamic finance in Malaysia. *Environment and Planning A: Economy and Space, 53*(8), 1896-1914. https://doi.org/10.1177/0308518X211038349

27. Liu, P. C. Y., Lo, H. W., & Liou, J. J. H. (2020). A Combination of DEMATEL and BWM-Based ANP Methods For Exploring The Green Building Rating System In Taiwan. *Sustainability, 12*(8), 3216. https://doi.org/10.3390/SU12083216

28. Mat Rahim, S. R., & Mohamad, Z. Z. (2018). Green Sukuk for Financing Renewable Energy Projects. *Turkish Journal of Islamic Economics, 5*(2), 129-144. https://doi.org/10.26414/m031

29. Morea, D., & Poggi, L. A. (2017). An Innovative Model for the Sustainability of Investments in the Wind Energy Sector: The Use of Green Sukuk in an Italian Case Study. *International Journal of Energy Economics and Policy, 7*(2), 53-60. Retrieved from https://econjournals.com/index.php/ijeep/article/view/4073

30. Mulyana, A., Ridaryanthi, M., Faridah, S., Umarella, F. H., & Endri, E. (2022). Socio-Emotional Leadership Style as Implementation of Situational Leadership Communication in the Face of Radical Change. *Academic Journal of Interdisciplinary Studies, 11*(3), 150-161. https://doi.org/10.36941/ajis-2022-0074

31. Niemira, M. P., & Saaty, T. L. (2004). An analytic network process model for financial-crisis forecasting. *International Journal of Forecasting, 20*(4), 573-587. https://doi.org/10.1016/j.ijforecast.2003.09.013

32. Niyazbekova, S., Moldashbayeva, L., Kerimkhulle, S., Dzholdoshev, N., Dzholdosheva, T., & Serikova, M. (2021). Green Bonds a Tool For Financing Green Projects in Countries. *E3S Web of Conferences, 244,* 10060. https://doi.org/10.1051/e3sconf/202124410060

33. Nurhayati, I., Endri, E., Aminda, R. S., & Muniroh, L. (2021). Impact of COVID-19 on Performance Evaluation Large Market Capitalization Stocks and Open Innovation. *Journal of Open Innovation: Technology, Market, and Complexity, 7*(1), 56. https://doi.org/10.3390/joitmc7010056

34. Prakash, N., & Sethi, M. (2022). A review of innovative bond instruments for sustainable development in Asia. *International Journal of Innovation Science, 14*(3/4), 630-647. https://doi.org/10.1108/IJIS-10-2020-0213

35. Pratanjana, N., & Simbolon, G. O. (2020). Issuance of Green Bond For Sustainable Development of Peatlands. *Social Polites, 21*(2), 176-192. https://doi.org/10.33541/sp.v21i3.2259

36. Saaty, T. L. (2006). The Analytic Network Process. In *Decision Making with the Analytic Network Process* (pp. 1-26). Springer US. https://doi.org/10.1007/0-387-33987-6_1

37. Santoso, I. R. (2020). Green Sukuk and sustainable economic development goals: Mitigating climate change in Indonesia. *Global Journal Al-Thaqafah, 10*(1), 18-26. http://dx.doi.org/10.7187/GJAT072020-3

38. Shahnia, C., Purnamasari, E.P., Hakim, L., & Endri, E. (2020). Determinant of profitability: Evidence from trading, service, and investment companies in Indonesia. *Accounting, 6*(5), 787-794. https://doi.org/10.5267/j.ac.2020.6.004

39. Sinuany-Stern, Z., Mehrez, A., & Hadad, Y. (2000). An AHP/DEA methodology for

ranking decision-making units. *International transactions in operational research, 7*(2), 109-124. https://doi.org/10.1111/j.1475-3995.2000.tb00189.x

40. Sitompul, R. F., Endri, E., Hasibuan, S., Jaqin, C., Indrasari, A., & Putriyana, L. (2022). Policy Challenges of Indonesia's Local Content Requirements on Power Generation and Turbine Production Capability. *International Journal of Energy Economics and Policy, 12*(1), 225-235. https://doi.org/10.32479/ijeep.12504

41. Suherman, S., Noor, I., & Manzilati, A. (2019). Identifikasi Potensi Pasar Green Sukuk Republik Indonesia. *Human Falah: Jurnal Ekonomi Dan Bisnis Islam, 6*(1), 37-53. (In Indonesian). Retrieved from http://jurnal.uinsu.ac.id/index.php/humanfalah/article/view/4177

42. Suryadi, S., Endri, E., & Yasid, M. (2021). Risk and Return of Islamic and Conventional Indices on the Indonesia Stock Exchange. *Journal of Asian Finance, Economics, and Business, 8*(3), 23-30. https://doi.org/10.13106/jafeb.2021.vol8.no3.0023

43. Taghizadeh-Hesary, F., Yoshino, N., & Phoumin, H. (2021). Analyzing the Characteristics of Green Bond Markets to Facilitate Green Finance in the Post-COVID-19 World. *Sustainability, 13*(10), 5719. https://doi.org/10.3390/su13105719

44. Wang, K. H., Zhao, Y. X., Jiang, C. F., & Li, Z. Z. (2022). Does green finance inspire sustainable development? Evidence from a global perspective. *Economic Analysis and Policy, 75,* 412-426. https://doi.org/10.1016/j.eap.2022.06.002

http://dx.doi.org/10.21511/ee.13(1).2022.04

APPENDIX A

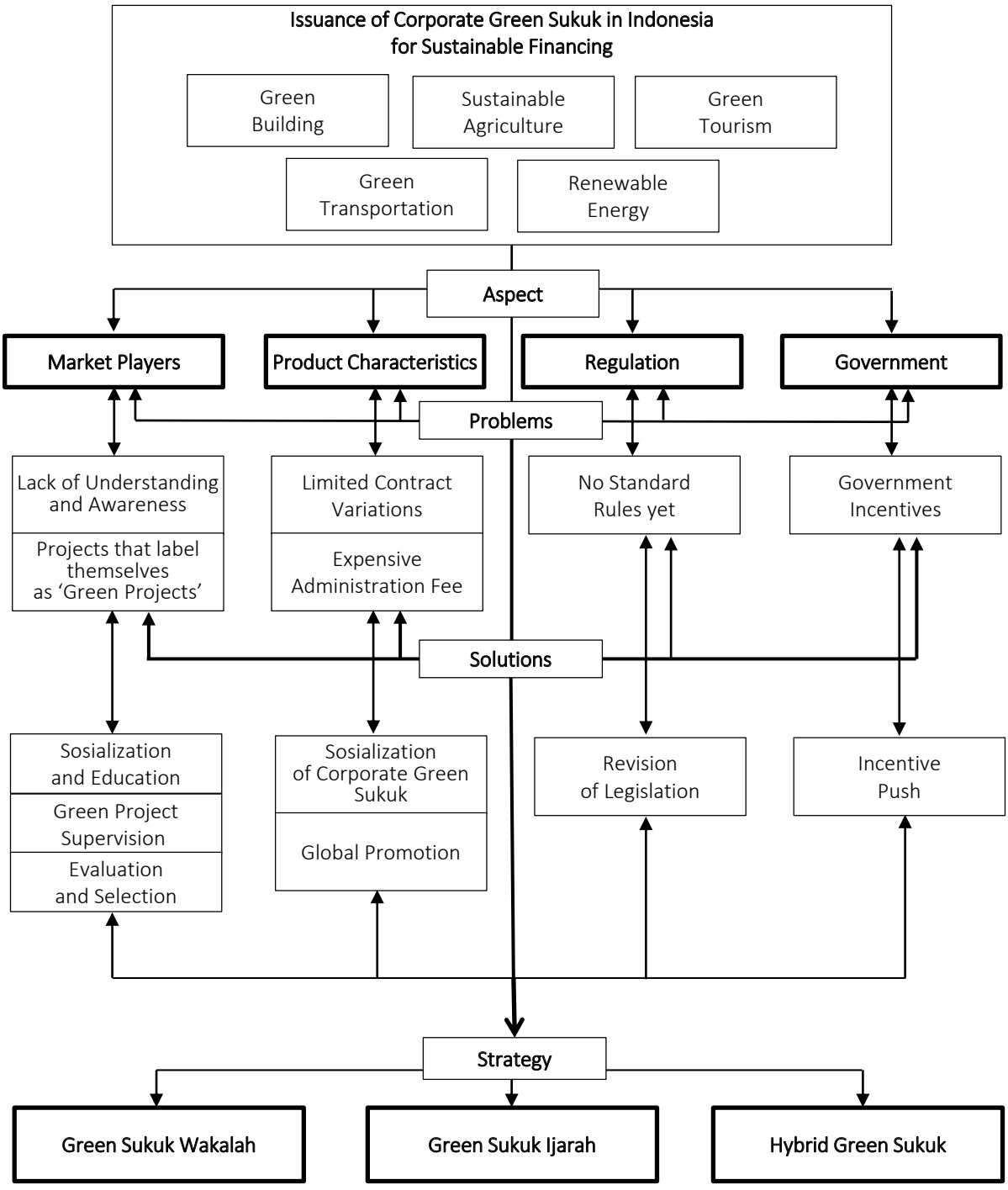

Figure A1. ANP feedback: Network potential for issuing green corporate Sukuk in Indonesia