

The Determinant of Sustainable Certification Adoption in Indonesia Palm Oil Industry

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ABSTRACT

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The palm oil industry operational causes several debate, especially in environmental and social problems. Roundtable on Sustainable Palm Oil (RSPO) is presented as the institution that oversees sustainable development through the sustainable certification issued. The motivation of the adoption recently from the public pressure for palm oil companies to adopted this certification. However, this pressure is only the external factor to driven the sustainable development in palm oil companies. The internal factor from palm oil industry have not observed as the adoption of sustainable certification. Therefore, the purpose of this study is to examine the factors that affected the adoption of sustainable certification in oil palm companies by using binary logistic regression. We examined 14 financial reports of the Indonesia palm oil companies that go-public from 2014 until 2019. The results show that Return on Assets (ROA), Current Ratio, Firm Size, and Oil Extraction Rate (OER) not affect the adoption of RSPO. However, the Return on Equity (ROE), Debt to Equity Ratio (DER), and Export significantly influence the RSPO adoption by Indonesian palm oil companies. The internal factor, specifically in financial aspects be the main driver for adopting the sustainable certification. Therefore, the promotion of sustainable certification must lead on the growth of finance performance to maintain this adoption. The limitation of this research is only focused to listed palm oil companies in Indonesia

1. INTRODUCTION

Indonesia is the largest palm oil producer in the world since 2004. Thus, the industry is very competitive in the global market [1]. The total export of Indonesian palm oil in 2018 is 30,3 million tons [2]. The palm oil industry also contributes significantly to social aspects through alleviating poverty and developing welfare for the wider community [3, 4]. Besides, the palm oil industry has the potential to provide large profits and create other derivative industry [5, 6]. Although the industry has a positive contribution, the palm oil operational activity is accused of the deforestation, water, land-use change, and social issues that could occur in the surrounding community [7, 8]. In addressing these issues, several regulations related to sustainability standards have been developed. The European Union only approves palm oil products that are suitable for sustainable development [9]. This regulation could create global pressure for the palm oil industry to support sustainable development [10]. The palm oil business is vulnerable to global vegetable oil trade competition and is under a considerable measure of worldwide pressure due to bad media attention and intensive mediatization. Therefore, academics, corporate organizations, communities, and government (the triple helix) are face a challenge for palm oil industry improvement that may affect their desire and capacity to compete in achieving shared value to fulfilment [11].

The oil palm companies implement sustainable development in their operational activities and growing

environmental and social issues. Therefore, Roundtable on Sustainable Palm Oil (RSPO) is present as one of the global organizations that ensure sustainable development in the palm oil industry. The adoption of sustainable development based on global standards could play a fundamental role in contributing to organizational output legitimacy to produce sustainable results and impacts [12]. However, there was a decline in the performance of oil palm plantation companies. The implementation of sustainable development affected the loss of financial performance and is considered part of the corporate responsibility towards the environment [13]. Economic losses are expected from certification and membership costs, including consumers who could not pay an extra price for sustainable palm oil products. Therefore, it does not affect firm performance [14]. The problems lead to how the internal conditions could underlie oil palm plantation companies' decision to adopt sustainable certification. The sustainable certification is the important criteria for attract an investor to palm oil stocks [15].

Firm has a several benefits, such as projected more outstanding sales, improved operations, improved morale for employees, and greater access to markets [16]. Thus, it can increase the performance of oil palm plantation companies. Therefore, compliance with global standards is an opportunity to develop the company's competitive advantage. The adoption of sustainable certification could increase new market share in particular countries [17]. Based on the research gap, it was found that there are different impacts of RSPO adoption. Decision-making related to the adoption of

sustainable certification certainly requires an excellent financial estimation and prediction to improve its performance. Indonesia is the country that has an RSPO certified palm oil-producing country in the world [18]. This research aims to determine the factors that influence the adoption of sustainable certification by Indonesian palm oil companies, especially from an internal firm condition. The sustainable certification has been collected through financial report that listed in Indonesia Stock Exchange (IDX).

In general, the term sustainable term refers to companies' practice in acquiring profits by considering environmental and social issues. RSPO is a non-profit organization that integrates stakeholders from seven actors of the palm oil industry: producers of consumer pieces of stuff, traders and processors, retail, banking and investors, and Non-Governmental Organizations (NGOs), environmental preservation, and NGOs in the social field. RSPO develops sustainable standards based on global certification for palm oil with the purpose that palm oil companies can provide the profits without forfeit environmental and social aspects [19]. RSPO consist of eight (8) principles, which are 1) transparency commitment, 2) fulfillment with applicable laws and regulations, 3) long-term financial commitment and economic continuity, 4) optimum and appropriate implementation by the owner of palm oil companies, 5) environmental for responsibility and resources-biodiversity conservation, 6) deliberation of responsibility for workers, individuals, and communities influenced by the activities of palm oil plantations, 7) new plantings responsibility and development, and 8) commitment to constant refinement in areas. In principle, there are 43 criteria and 138 indicators to be tested on oil palm plantations.

A variety of conditions generally determines the adoption of sustainable certifications. Competitiveness, corporate culture, and public awareness positively influence sustainable practices in manufacturing companies [20]. Other findings indicate that consumers' signals create an influence on voluntary adoption of environmental certification and are followed by moral and ethical [21]. Organic product certification has a positive effect on the Return on Investment (ROI) in the scope of Ghana Farmers [22]. The previous research indicated that membership in farmer organizations, awareness of certification, and cocoa-producing households' size influence the adoption of sustainable certification [23]. Firm size, revenue, and gender of the owner-manager are linked to eco-certification [24]. Specifically, internal factors that influence the success of the RSPO adoption in oil palm smallholders are knowledge, directors' ability, farmer collaboration and information management, the appointment of farmer assistance, and benefits management in smallholder groups [25].

Based on previous studies, the palm oil companies have several factors that it considered a determinant in adopting the sustainable certification [26, 27]. The condition of internal companies is frequently associated with financial management and company activities. A higher financial ratio indicates the companies potentially make an investment, but the financial problems could disrupt the company's investment process [28]. Commonly, the company's investment activities can improve product quality through decision support system (DSS) implementation [29, 30], and also by implementing certification [31]. Whereas related to production activities, certification could create high product competitiveness and a company's position in the global market. The company's profitability variables revealed a positive impact after firms

applied for sustainable certification, while the market benefit variable showed gradual improvements after obtaining the certification [32, 33].

The RSPO adoption establishes a premium price on Crude Palm Oil (CPO) products [34]. It has the potential to create profits for the company. The Sustainable Certified CPO Products could increase market share for countries that require RSPO certification [17]. However, there is no difference in profitability between companies that adopt RSPO and companies that do not adopt RSPO [35]. Instead of it, other findings state that the adoption of sustainable certification could create profitability for companies [36]. The implementation of RSPO requires a massive cost and implicates economic losses for the company [14].

2. METHODOLOGY

The material in this research is compiled from financial report of oil palm plantation companies in Indonesia, which are registered on the IDX in 2014 to 2019. The number of samples in this research are 14 palm oil companies listed in IDX. There are limited data on the financial reports. Data collection based on secondary data, such as research and scientific articles, statistical reports and books. RSPO is a voluntary certification for palm oil industry, therefore it is necessary to discuss how internal company could influence the adoption of the certification. This study applied a logistic regression through common effect model to observe the determinants of the RSPO adoption by Indonesian oil palm companies. The dependent variable in this study involved RSPO adoption. Whereas, the independent variables are Return on Assets (ROA), Return on Equity (ROE), leverage, Current Ratio (CR), firm size, and Oil Extraction Rate (OER). The model was developed as follows:

$$SC_{it} = \alpha + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 CR_{it} + \beta_4 LEV_{it} + \beta_5 SIZE_{it} + \beta_6 OER_{it} + e_{it} \quad (1)$$

where, SC_{it} is the sustainable certification, adopting by firm i and period t , ROA_{it} is a profit divided by total assets in firm i and period t , CR_{it} is a measure of the liquidity ratio obtained from current assets divided by current debt in firm i and period t , ROE_{it} is a profit divided by total equity in firm i and period t , LEV_{it} is a capital structure of a firm which uses total debt divided by total equity in firm i and period t , $SIZE_{it}$ is the size of a firm that is represented by total assets with logarithm natural in firm i and period t , OER_{it} is the oil extraction rate in firm i and period t , and e_{it} is an error rate.

ROA and ROE used in this study as a measurement of returns on the total assets and equity. The decision to create an innovation highly depends on firm equity [37]. High returns could create large company capital in the future and be diverted to develop products. The adoption of the RSPO is one of the options that could be taken to increase the new market share of a company [17]. There is the financial indicator that sufficiently impacted, which is the current ratio. The ratio shows the good financial performance of the company. Companies with high liquidity could have a higher chance to develop their products [38]. The product developments in the oil palm environment are conducting sustainable certification. Therefore, there is an impact between the current ratio and RSPO adoption. The capital structure of this study is represented by the DER variable. Other findings show that the

adoption of sustainable certification depended on the capital structure [39]. There is an impact of DER on the adoption of RSPO on oil palm plantation companies in Malaysia [27].

Capital structure is the use of assets and funds sources by companies to increase the profitability of potential shareholders. Large debt capacity compared to company capital could create difficulty for companies to develop the product capabilities of the company [40, 41]. Therefore, the capital structure based on debt is tend to detain the adoption of the RSPO. The size of the company is taken as one of the independent variables in this study. The quantity of the product should be balanced with the quality of the product to absorb the needs of the overall market share. However, the company has a large asset would undertake the innovation for the products by developing the quality of the products through certification [42, 43]. Within the scope of oil palm companies, the sustainable certification could be an alternative despite this brings the additional cost. However, large companies tend to adopt sustainable certification. CPO extraction rate determine as an operational process to convert Fresh Fruit Bunches (FFB) to CPO [16]. Higher CPO extraction rates could be defined as a better managerial efficiency in oil palm companies and creates their perception that the need for certification will increase [27]. Based on the description of each variable, the hypothesis is developed in this study as follows:

- H1. Return on Assets (ROA) affects the RSPO adoption in oil palm companies
- H2. Return on Equity (ROE) affects the RSPO adoption in oil palm companies
- H3. Current Ratio affects the RSPO adoption in oil palm companies
- H4. Debt to Equity (DER) affects the RSPO adoption in oil palm companies
- H5. The firm size affects the RSPO adoption in oil palm companies
- H6. The CPO extraction rate affects the RSPO adoption in oil palm companies

The definition in independent and dependent variables are provided in Table 1, respectively

Table 1. Variable measurements

Variable	Definition
SC	A dummy variable which take the value of “1” if the firm’s adopted a sustainable certification, “0” otherwise
ROA	Return on assets, computed by dividing a net income in firm’s by the average of firm’s total assets
ROE	Return on equity, computed by dividing a net income in firm’s by the average of firm’s total equity
Current Ratio	The firm’s current ratio computed by dividing as the current assets to current liabilities.
DER	The firm’s total debt ratio computed by dividing as the total debt in firm’s to total equity.
Size	The natural logarithm of the firm’s total assets.
OER	The CPO extraction rate in firm’s annual report

3. RESULTS

The descriptive analysis applied in this study, as could be explained in Table 2. The descriptive table performed the analysis by displaying the mean and standard deviation of the independent variables in all oil palm companies in Indonesia.

The descriptive analysis results show that data from oil palm companies in Indonesia have a high difference value except for size and OER. Both of these variables have a small standard deviation value compared to the mean value. The higher mean in the research variables is:

Table 2. Descriptive analysis

Variables	N	Mean	Std. Dev	Min	Max
ROA	84	0.27	10.44	-58.3	18.3
ROE	84	5.76	47.11	-134.2	350.2
Current Ratio	84	1.33	1.14	0.11	5.21
DER	84	0.71	5.56	-46	10.2
SIZE	84	16.10	0.76	14.5	17.4
OER	84	22.12	1.08	19.9	24.5

The result of logistic regression is presented in Table 3. It explains that the regression model is appropriate with a probability Chi-Square above 5% or 0.05, hence that the model is declared fit. ROE, Current Ratio and DER affected the adoption of sustainable certification in period from 2014 until 2019. Moreover, ROA, SIZE and OER are not influenced.

Table 3. Logistic regression

Variables	Coefficients	Std Err.
Constant	-5.31	9.18
ROA	-0.19	0.12
ROE	0.17***	0.06
Current Ratio	0.70*	0.37
DER	1.27***	0.48
SIZE	0.58	0.38
OER	-0.27	0.28
Prob. Chi-Sq	0.781	
Log likelihood	-38.91	
McFadden R-Squared	0.296	

*, **, and *** Significant at 10%, 5% and 1%.

Based on Table 3, this study found that ROA and OER, had no effect on the adoption of sustainable certification. The two variables can be considered as a measure of operational performance. Hence, oil palm companies continue to operate well, even though the company does not take this certification. The findings also show that firm size has no effect on the adoption of RSPO. The average of firm size of oil palm companies shown similarities, so that almost all of the oil palm companies have large assets. This finding is different from several previous studies [44, 45].

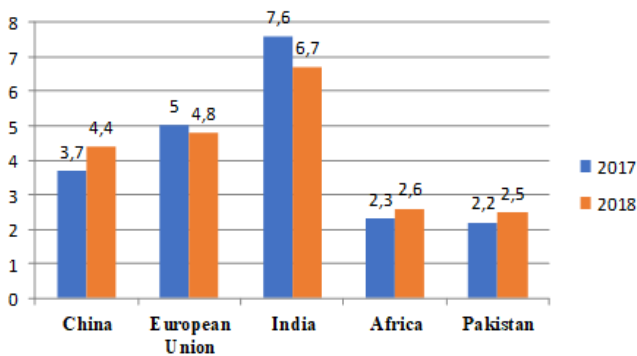
The results shows that consideration of Indonesia palm oil companies to follow sustainable certification is based on three financial ratios. There are a positive impact and significance from ROE and Current Ratio. ROE can be described as a proxy of performance of oil palm companies [35]. On the other hand, current ratio is proxied as the performance of liquidity. A high level of profitability and liquidity can make it easier for oil palm companies to have additional capital. ROE can be an assessment for an investor to provide capital and has implications for adopting sustainable certification. Besides, high ROE value means the palm oil company can improve the firm performance and reach competitive advantage by innovating in technology or joining a sustainable certification. These results support some of the literature related to the effect of firm profitability on decisions to adopt certification [32, 33, 46].

The other findings in Table 3 indicate that DER has a positive effect and significance on RSPO adoption. The high

of the DER value shows that the company is conducting investment activities to increase sales [44]. Oil palm companies have the potential to receive profits from the selling price. However, the palm oil companies must have large capital to participate in the certification [13]. These findings are similar with the findings of previous studies by Tey et al. [27].

Furthermore, the Global pressure serves as main mechanisms due to mandatory returns for exporters who do not meet international criteria [47, 48]. Oil palm companies in Indonesia need to implement a sustainable aspect through the adoption of sustainable certification, which to tackle environmental issues from foreign consumers to increase their sales. International certification can increase the legitimacy of companies to gain the trust of palm oil importing countries [45, 49]. Figure 1 shows that the level of CPO exports in Indonesia is high in international markets, especially the European Union which requires sustainable certification as a reservation for palm oil to enter their market.

Based on McFadden R-Squared, the strength of the factors, identified in this research can be influence the adoption of sustainable certification is 29.6%. The results show there are other variables with 71.4% in outside the research that could determine RSPO adoption. Moreover, this research gains some financial variables due to the stable financial performance in company able to adopt the sustainable certification A palm oil company that sought to implement sustainable palm oil practices discovered that the expenditures were more than the income potential [50]. Thus, the sustainable certification refers to corporate responsibility for environment and society. Although smallholders in Indonesia are involved in operational process, the oil palm company has an important role to ensure that smallholder groups could be implemented. Moreover, the research related sustainable certification in corporate scopes is necessary due to implication on firm performance [51].



Source: Bureau of Central Statistics [52]

Figure 1. Indonesia CPO export destination (Million Tons)

4. CONCLUSIONS

This study aims to determine the adoption of the sustainable certification in Indonesian Palm Oil Companies in 2014-2019. This research findings show that the adoption of RSPO is not influenced by ROA, firm size, and OER. However, the results found that ROE, Current Ratio, and DER had an impact on sustainable certification adoption. This research also provides empirical evidence that other variables outside the research could determine RSPO adoption.

There is a theoretical contribution in this research to develop literature related to the RSPO adoption in Indonesian oil palm companies' scope, especially from the perspective of the company's internal conditions, considering that the market share of Indonesian palm oil companies is mostly from countries that require sustainable certification. This research implies that palm oil companies in Indonesia continue to adopt sustainable certification, based on high profitability, liquidity and leverage. There are suggestions for future research includes:

1. The addition of other variables from non-financial conditions.
2. The enlargement of the research observations.
3. Future research can observe the other certification determinants in oil palm companies in Indonesia, except sustainable development aspects.
4. The other technique approaches need to be resolved to obtain accurate results in future research.

REFERENCES

- [1] Suroso, A.I., Ramadhan, A. (2014). Structural path analysis of the influences from smallholder oil palm plantation toward household income: One aspect of e-Government Initiative. *Advanced Science Letters*, 20(1): 352-356. <http://dx.doi.org/10.1166/asl.2014.5317>
- [2] Statistics Indonesia. (2018) Gross Domestic Product. Jakarta. <https://www.bps.go.id/subject/11/produk-domestik-bruto--lapangan-usaha-.html>, accessed on Nov. 6, 2021.
- [3] Basiron, Y., Weng, C.K. (2004). The oil palm and its sustainability. *Journal of Oil Palm Research*, 16(1): 1-10.
- [4] Rifin, A. (2020). Assessing the impact of limiting Indonesian palm oil exports to the European Union. *Journal of Economic Structures*, 9(1), 1-13. <http://dx.doi.org/10.1186/s40008-020-00202-8>
- [5] Basiron, Y. (2007). Palm oil production through sustainable plantations. *European Journal of Lipid Science and Technology*, 109(4): 289-295. <https://doi.org/10.1002/ejlt.200600223>
- [6] Faulkner, O.T., Mackie, J.R. (2016). *West African Agriculture*. Cambridge University Press.
- [7] Rist, L., Feintrenie, L., Levang, P. (2010). The livelihood impacts of oil palm: Smallholders in Indonesia. *Biodiversity and Conservation*, 19(4): 1009-1024. <https://doi.org/10.1007/s10531-010-9815-z>
- [8] Oosterveer, P. (2015). Promoting sustainable palm oil: Viewed from a global networks and flows perspective. *Journal of Cleaner Production*, 107: 146-153. <https://doi.org/10.1016/j.jclepro.2014.01.019>
- [9] Poletti, A., Sicurelli, D. (2016). The European Union, Preferential Trade Agreements, and the International Regulation of Sustainable Biofuels. *Journal of Common Market Studies*, 54(2): 249-266. <https://doi.org/10.1111/jcms.12293>
- [10] Verneau, F., La-Barbera, F., Amato, M., Sodano, V. (2019). Consumers' concern towards palm oil consumption. *British Food Journal*, 121(9): 1982-1997. <https://doi.org/10.1108/BFJ-10-2018-0659>
- [11] Suroso, A.I., Pahan, I., Tandra, H. (2021). Triple bottom line in Indonesia commercial palm oil mill business: Analytical network process approach. *International Journal of Sustainable Development and Planning*, 16(5):

- 965-972. <https://doi.org/10.18280/ijstdp.160517>
- [12] Higgins, V., Richards, C. (2019). Framing sustainability: Alternative standards schemes for sustainable palm oil and South-South trade. *Journal of Rural Studies*, 65: 126-134. <https://doi.org/10.1016/j.jrurstud.2018.11.001>
- [13] Salman, F., Najib, M., Djohar, S. (2017). Cost and benefit analysis of RSPO certification (case study in PT BCA oil palm plantation in Papua). *Indonesian Journal of Business and Entrepreneurship (IJBE)*, 3(3): 219. <https://doi.org/10.17358/ijbe.3.3.219>
- [14] Basiron, Y., Yew, F.K. (2016). The burden of RSPO certification costs on Malaysian palm oil industry and national economy. *Environment & Health*, 7: 19-27.
- [15] Suroso, A., Tandra, H., Syaukat, Y., and Najib, M. (2021). The issue in Indonesian palm oil stock decision making: Sustainable and risk criteria. *Decision Science Letters*, 10(3): 241-246. <https://doi.org/10.5267/j.dsl.2021.4.001>
- [16] Tey, Y.S., Brindal, M., Darham, S., Sidique, S.F.A., Djama, M. (2020). Early mover advantage in Roundtable on Sustainable Palm Oil certification: A panel evidence of plantation companies. *Journal of Cleaner Production*, 252: 119775. <https://doi.org/10.1016/j.jclepro.2019.119775>
- [17] Richardson, B. (2015). Making a market for sustainability: The commodification of certified palm oil. *New Political Economy*, 20(4): 545-568. <https://doi.org/10.1080/13563467.2014.923829>
- [18] Ministry of Agriculture. (2015). Studi Bersama Persamaan dan Perbedaan Sistem Sertifikasi ISPO dan RSPO, Ministry of Agriculture. https://www.id.undp.org/content/indonesia/en/home/library/environment_energy/studi-bersama-persamaan-dan-perbedaan-sistem-sertifikasi-ispo-da.html.
- [19] RSPO. (2020). <https://rspo.org/about>, accessed on July 19, 2020.
- [20] Abdul, R., Salwa, H., Sakurandini, N., Ghazila, R., Ariffin, R., Ramayah, T. (2017). The impact of sustainable manufacturing practices on sustainability performance: Empirical evidence from Malaysia. *International Journal of Operations and Production Management*, 37(2): 182-204. <https://doi.org/10.1108/IJOPM-04-2015-0223>
- [21] Galati, A., Gianguzzi, G., Tinervia, S., Crescimanno, M., Veca, D.S.L.M. (2017). Motivations, adoption and impact of voluntary environmental certification in the Italian Forest based industry: The case of the FSC standard. *Forest Policy and Economics*, 83: 169-176. <https://doi.org/10.1016/j.forpol.2017.08.002>
- [22] Kleeman, L., Abdulai, A., Buss, M. (2014). Certification and access to exports markets: Adoption and return on investment of organic certified pineapple farming in Ghana. *World Development*, 64: 79-92. <https://doi.org/10.1016/j.worlddev.2014.05.005>
- [23] Aidoo, R., Fromm, I. (2015). Willingness to adopt certifications and sustainable production methods among small-scale cocoa farmers in the Ashanti region of Ghana. *Journal of Sustainable Development*, 8(1): 33-43. <https://doi.org/10.5539/jsd.v8n1p33>
- [24] Margaryan, L., Stensland, S. (2017). Sustainable by nature? The case of (non)adoption of eco-certification among the nature-based tourism companies in Scandinavia. *Journal of Cleaner Production*, 162: 559-567. <https://doi.org/10.1016/j.jclepro.2017.06.060>
- [25] Chanthawong, A., Khongkhon, B., Thaweehirunratthakid, N., Laoyoung, K. (2018). Factor affecting on success and failure for roundtable sustainable palm oil (RSPO) in Thailand. *International Journal of Applied Business and Economic Research*, 16(1): 189-198.
- [26] Brandi, C., Cabani, T., Hosang, C., Schirmbeck, S., Westermann, L., Wiese, H. (2015). Sustainability standards for palm oil: Challenges for smallholder certification under the RSPO. *Journal of Environment and Development*, 24(3): 292-314. <https://doi.org/10.1177/1070496515593775>
- [27] Tey, Y.S., Brindal, M., Darham, S., Sidique, S.F.A., Djama, M. (2020). Factors influencing sustainability certification among plantation companies in Malaysia: A panel approach. *Sustainable Production and Consumption*, 22: 231-238. <https://doi.org/10.1016/j.spc.2020.03.005>
- [28] Lerskullawat, A. (2019). Financial development, financial constraint, and firm investment: Evidence from Thailand. *Kasetsart Journal of Social Sciences*, 40(1): 1-12. <https://doi.org/10.1016/j.kjss.2018.01.010>
- [29] Suroso, A.I., Ramadhan, A. (2012). Decision support system for agribusiness investment as e-government service using computable general equilibrium model. In *Proceedings of the 2011 2nd International Congress on Computer Applications and Computational Science* Springer, Berlin, Heidelberg, pp. 157-162. http://dx.doi.org/10.1007/978-3-642-28314-7_22
- [30] Suroso, A.I., Ramadhan, A. (2014). Decision support system for agricultural appraisal in dryland areas. *Advanced Science Letters*, 20(10-11): 1980-1986. <http://dx.doi.org/10.1166/asl.2014.5687>
- [31] Hutabarat, S., Slingerland, M., Rietberg, P., Dries, L. (2018). Costs and benefits of certification of independent oil palm smallholders in Indonesia. *International Food and Agribusiness Management Review*, 21(6): 681-700. <https://doi.org/10.22434/IFAMR2016.0162>
- [32] Lee, S.M., Noh, Y., Choi, D., Rha, J.S. (2017). Environmental policy performances for sustainable development: from the perspective of ISO 14001 certification. *Corporate Social Responsibility and Environmental Management*, 24(2): 108-120. <https://doi.org/10.1002/csr.1395>
- [33] Siougle, E., Dimelis, S., Economidou, C. (2019). Does ISO 9000 certification matter for firm performance? A group analysis of Greek listed companies. *International Journal of Production Economics*, 209: 2-11. <https://doi.org/10.1016/j.ijpe.2018.04.028>
- [34] D'Antone, S., Spencer, R. (2015). Organising for sustainable palm oil consumption: A market-based approach. *Consumption Markets and Culture*, 18(1): 55-71. <https://doi.org/10.1080/10253866.2014.899217>
- [35] Shahida, S., Hafizuddin-Syah, B.A.M., Fuad, S.H. (2018). The effect of sustainability certification for export on operational profitability of Malaysian palm oil companies. *Jurnal Ekonomi Malaysia*, 52(2): 55-67. <https://doi.org/10.17576/JEM-2018-5202-5>
- [36] Hafizuddin-Syah, B.A.M., Shahida, S., Fuad, S.H. (2018). Sustainability certifications and financial profitability: An analysis on palm oil companies in Malaysia. *Jurnal Pengurusan*, 54(2018): 143-154. <https://doi.org/10.17576/pengurusan-2018-54-12>
- [37] Acharya, V., Xu, Z. (2017). Financial dependence and

- innovation: The case of public versus private firms. *Journal of Financial Economics*, 124(2): 223-243. <https://doi.org/10.1016/j.jfineco.2016.02.010>
- [38] Pham, L.T.M., Vo, V.L., Le, H.T.T., Le, D.V. (2018). Asset liquidity and firm innovation. *International Review of Financial Analysis*, 58: 225-234. <https://doi.org/10.1016/j.irfa.2017.11.005>
- [39] Lafuente, E., Bayo-Moriones, A., García-Cestona, M. (2010). ISO-9000 certification and ownership structure: Effects upon firm performance. *British Journal of Management*, 21(3): 649-665. <https://doi.org/10.1111/j.1467-8551.2009.00660.x>
- [40] Velandia, M., Rejesus, R.M., Knight, T.O., Sherrick, B.J. (2009). Factors affecting farmers' utilization of agricultural risk management tools: The case of crop insurance, forward contracting, and spreading sales. *Journal of Agricultural and Applied Economics*, 41(1): 107-123. <https://doi.org/10.1017/S1074070800002583>
- [41] My, N.Q., Sayim, M., Rahman, H. (2019). Debt financing and the failure of innovation companies: The application of the CHS model in U.S. stock markets. *Global Economic Review*, 48(2): 180-212. <https://doi.org/10.1080/1226508X.2019.1588767>
- [42] Ullah, B., Wei, Z., Xie, F. (2014). ISO certification, financial constraints, and firm performance in Latin American and Caribbean countries. *Global Finance Journal*, 25(3): 203-228. <https://doi.org/10.1016/j.gfj.2014.10.003>
- [43] Lin, W.L., Cheah, J.H., Azali, M., Ho, J.A., Yip, N. (2019). Does firm size matter? Evidence on the impact of the green innovation strategy on corporate financial performance in the automotive sector. *Journal of Cleaner Production*, 229: 974-988. <https://doi.org/10.1016/j.jclepro.2019.04.214>
- [44] Wu, S.Y., Chu, P.Y., Liu, T.Y. (2007). Determinants of a firm's ISO 14001 certification: An empirical study of Taiwan. *Pacific Economic Review*, 12(4): 467-487. <https://doi.org/10.1111/j.1468-0106.2007.00365.x>
- [45] Pekovic, S. (2010). The determinants of ISO 9000 certification: A comparison of the manufacturing and service sectors. *Journal of Economic Issues*, 44(4): 895-914. <https://doi.org/10.2753/JEI0021-3624440403>
- [46] Kusumah, L.H., Fabianto, Y.S. (2018). The differences in the financial performance of manufacturing companies in Indonesia before and after ISO 9000 implementation. *Total Quality Management and Business Excellence*, 29(7-8): 941-957. <https://doi.org/10.1080/14783363.2016.1237285>
- [47] Anders, S.M., Caswell, J.A. (2009). Standards as barriers versus standards as catalysts: Assessing the impact of HACCP implementation on U.S. seafood imports. *American Journal of Agricultural Economics*, 91(2): 310-321. <https://doi.org/10.1111/j.1467-8276.2008.01239.x>
- [48] Fikru, M.G. (2014). Firm level determinants of international certification: Evidence from Ethiopia. *World Development*, 64: 286-297. <https://doi.org/10.1016/j.worlddev.2014.06.016>
- [49] Guler, I., Gullen, M.F., Macpherson, J.M. (2002). Global competition, institutions, and the diffusion of organizational practices: The international spread of ISO 9000 quality certificates. *Administrative Science Quarterly*, 47(2): 207-232. <https://doi.org/10.2307/3094804>
- [50] Tandra, H., Suroso, A., Najib, M., Syaukat, Y. (2021). The effect of COVID-19 in European union on the performance of Indonesian publicly listed palm oil companies. *Accounting*, 7(4): 801-808. <https://doi.org/10.5267/j.ac.2021.2.004>
- [51] Suroso, A.I., Tandra, H., Wahyudi, I. (2021). The Impact of sustainable certification on financial and market performance: Evidence from Indonesian palm oil companies. *International Journal of Sustainable Development and Planning*, 16(8): 1495-1500. <https://doi.org/10.18280/ijstdp.160810>
- [52] Statistics Indonesia. (2020). Crude Palm Oil Export. Jakarta. <https://www.bps.go.id/statictable/2014/09/08/1026/ekspor-minyak-kelapa-sawit-menurut-negara-tujuan-utama-2012-2020.html>