



# **ENVIRONMENTAL ISSUES AND SOCIAL INCLUSION IN A SUSTAINABLE ERA**

Edited by

R. Iqbal Robbie, Ali Roziqin, Shannaz Mutiara Deniar,  
Ardik Praharjo and Kenny Roz



## ENVIRONMENTAL ISSUES AND SOCIAL INCLUSION IN A SUSTAINABLE ERA

The Sustainable Development Goals (SDG) and the Paris Climate Agreement are examples of initiatives where countries show recognition of their interconnected interests and goals. This is particularly evident in the case of global environmental issues because they require global decision-making. The emergence of global environmental issues such as climate change, marine pollution and biodiversity loss has brought new challenges to governance and requires political support and innovation of global public policies. In addition, many social problems arise because of the environmental crisis.

*Environmental Issues and Social Inclusion in a Sustainable Era* discusses environmental and social inclusion from a socio-economic perspective. The contributions analyse the management of global environmental problems at local, national and international levels, with a special focus on multilevel governance, innovative public policies, and economic development finance and business.



# Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

PROCEEDINGS OF THE 2ND INTERNATIONAL CONFERENCE ON HUMANITIES AND  
SOCIAL SCIENCES (ICHSOS 2022), MALANG, INDONESIA, 1–2 JULY 2022

# Environmental Issues and Social Inclusion in a Sustainable Era

*Edited by*

**R. Iqbal Robbie**

*Department of Management, Universitas Muhammadiyah Malang, Indonesia*

**Ali Roziqin**

*Department of Government Studies, Universitas Muhammadiyah Malang,  
Indonesia*

**Shannaz Mutiara Deniar**

*Department of International Relations, Universitas Muhammadiyah Malang,  
Indonesia*

**Ardik Praharjo and Kenny Roz**

*Department of Management, Universitas Muhammadiyah Malang, Indonesia*



ROUTLEDGE

**Routledge**

Taylor & Francis Group

LONDON AND NEW YORK

First published 2024  
by Routledge  
4 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN

and by Routledge  
605 Third Avenue, New York, NY 10158  
e-mail: [enquiries@taylorandfrancis.com](mailto:enquiries@taylorandfrancis.com)  
[www.routledge.com](http://www.routledge.com) – [www.taylorandfrancis.com](http://www.taylorandfrancis.com)

*Routledge is an imprint of the Taylor & Francis Group, an informa business*

© 2024 selection and editorial matter, R. Iqbal Robbie, Ali Roziqin, Shannaz Mutiara Deniar, Ardik Praharjo and Kenny Roz; individual chapters, the contributors

The right of R. Iqbal Robbie, Ali Roziqin, Shannaz Mutiara Deniar, Ardik Praharjo and Kenny Roz to be identified as the authors of the editorial material, and of the authors for their individual chapters, has been asserted in accordance with sections 77 and 78 of the Copyright, Designs and Patents Act 1988.

The Open Access version of this book, available at [www.taylorfrancis.com](http://www.taylorfrancis.com), has been made available under a Creative Commons Attribution-Non Commercial-No Derivatives 4.0 license.

Funded by Universitas Muhammadiyah Malang.

Although all care is taken to ensure integrity and the quality of this publication and the information herein, no responsibility is assumed by the publishers nor the author for any damage to the property or persons as a result of operation or use of this publication and/or the information contained herein.

ISBN: 978-1-032-41938-1 (hbk)  
ISBN: 978-1-032-41939-8 (pbk)  
ISBN: 978-1-003-36048-3 (ebk)

DOI: 10.1201/9781003360483

Typeset in Times New Roman  
by MPS Limited, Chennai, India

## Table of Contents

<i>Preface</i>	ix
<i>Acknowledgements</i>	xi
<i>Committee Members</i>	xiii
<i>Scientific Committee</i>	xv
The implementation of sustainable energy policy in Indonesia: New and renewable energy <i>Asep Nurjaman</i>	1
The effect of sustainability report disclosure on company value with profitability as a moderating variable <i>Muhammad Wildan Affan &amp; Kresnalan Wicaksana</i>	7
Human resources management: Bibliometric analysis of green training <i>Nurul Asfiah, Ratya Shafira Arifiani &amp; Titiek Ambarwati</i>	16
The performance measures of Islamic banking in Indonesia based on the Sharia Maqashid Index <i>Masiyah Kholmi, Adi Prasetyo &amp; Tri Wahyu Oktavendi</i>	21
A zero-waste communication campaign on a vocational school environmental design through mural and signage <i>D. Trihanondo, T. Haryotedjo &amp; D. Endriawan</i>	32
Indonesia green human resource management: A bibliometric analysis <i>Khusnul Rofida Novianti &amp; Aniek Rumijati</i>	37
Constructing green human capital concept for corporate sustainability: Interdisciplinary perspective <i>Driana Leniwati &amp; Mudrifah</i>	43
Superior and inferior: CSR, assurance CSR, performance and value of firm, and halo effects <i>Endang Dwi Wahyuni, Fahmi Dwi, Mawardi &amp; Agung P.N. Wicaksono</i>	56
Fundamentals of peace education: Civic education and peacebuilding in Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) <i>E. Ian Nasser &amp; Berowa</i>	70
Does volunteer motivation affect the satisfaction of COVID-19 task force volunteers? <i>Immanuel Mu'ammal, Siti Nurhasanah &amp; Lukman Dzulhilmi</i>	88
Marketing management: Bibliometric analysis of social media marketing during the COVID-19 pandemic <i>Rohmat Dwi Jatmiko &amp; Rinaldy Achmad Roberth Fathoni</i>	93

Green finance bibliometrics analysis for current research, future, and sustainability <i>Chalimatuz Sa'diyah</i>	99
MOTHAFKA as a communication medium to raise sustainable eco-fashion <i>F.M. Gasa, Y.A. Kusumawati &amp; J.D. Nugroho</i>	105
Jempol paten: A technology-based public service innovation <i>Iraddhad Taqwa Sihidi, Holifah, Salahudin &amp; Ali Roziqin</i>	115
Antecedent factors operations strategy and impact on performance: Indonesian construction case <i>Fien Zulfikarijah, Baroya Mila Shanty &amp; Tsabita Khwarazmita</i>	128
The impact of product packaging, consumer knowledge, and celebrity endorsement on purchase intention mediated by consumer perceived value in the millennial mom segment <i>R.T. Herman &amp; Theresa Oeylianto</i>	143
EQO: Designing eco-friendly packaging using bagasse and rice husk waste <i>Y.A. Kusumawati &amp; J.C. Wijaya</i>	152
Public sector innovation of local government to mitigate violence against women and children in Pasuruan Regency <i>Ali Roziqin, Yusrin, Rahmawati, Asep Nurjaman &amp; Yana S. Hijri</i>	160
E-Siap as a public service innovation: An evaluation of efficiency and effectiveness <i>Lailatul Fajriyah, Krishno Hadi, Iraddhat Taqwa Sihidi &amp; Ali Roziqin</i>	168
Consumer's behavior intention in using green skincare products <i>Ardik Praharjo &amp; Rahmad Wijaya</i>	176
Green diplomacy as an effort by the Indonesian government in Realizing Net Zero Emission (NZE) in the year 2060 <i>Haryo Prasodjo</i>	184
The application of deep learning to predict Indonesian green banking stock <i>Widhiyo Sudiyono</i>	191
Occupation of palm plantation population to <i>Rombong Suku Rimba</i> in Dharmasraya, <i>Sumatra Barat</i> : domain analysis of rural settlements from transmigrant program <i>Ahmad Arrozy, Ali Roziqin &amp; Siti Muhibah</i>	199
The effect of spiritual leadership on organizational commitment through workplace spirituality and intrinsic motivation <i>Mukrimah, Tri Wulida Afrianty &amp; Arik Prasetya</i>	208
Carbon emission disclosure and cost of capital in Indonesian <i>Andanrani, Dwi Irawan, Ahmad Juanda &amp; Sri Wibawani Wahyuning Astuti</i>	220
What is the husband's role in supporting his working wife to be involved in social life? <i>Sowanya Ardi Prahara, Triana Noor Edwina Dewayani Soeharto &amp; Muhammad WahyuKuncoro</i>	231

A systematic review of smart eco-industrial park development: Environment policy based on the industrial area in Indonesia <i>Tri Sulistyarningsih &amp; Umi Kulsum</i>	245
Global civil society vis-a-vis state and corporation: The challenges of Greenpeace in reducing deforestation in Brazil <i>Najamuddin Khairur Rijal &amp; Uswatun Hasanah</i>	255
Islamic corporate governance, profitability, corporate social responsibility, and sustainability report disclosure <i>Siti Zubaidah &amp; Pipit Diah Pratiwi</i>	263
The theory of planned behavior examination on pro-environment consumer behavior: A study in Banjarbaru, South Kalimantan Indonesia <i>Widayat, Helina Ade Putri, Sri Nastiti Andharini &amp; Warsono</i>	273
Analyzing the perceived understanding of public managers of data quality for data-driven decision-making at local government in Indonesia <i>Djoko Sigit Sayogo, Sri Budi Cantika Yuli &amp; Firda Ayu Amalia</i>	283
The role of organizational citizenship behavior for environment (OCBE) in mediating the effect of Corporate Social Responsibility (CSR) on green performance <i>Rizki Febriani &amp; Sandra Irawati</i>	289
Green supply chain management practice and competitive advantage: Evidence in SMEs Malang City <i>Nazaruddin Malik &amp; Kenny Roz</i>	295
Halal tourism development (Literature perspective) <i>Ratih Juliati &amp; Yulist Rima Fiandari</i>	301
Taiwan digital diplomacy association as new public diplomacy practice in the digital era <i>Bima Jon Nanda</i>	310
Online political trust in Anies Baswedan as a candidate for the President of Indonesia 2024 <i>Luth, Rani Maswati &amp; Tawakkal Baharuddin</i>	317
Media and empowerment for sustainable production of coconut sugar in Banyumas Central Java 1 <i>Agoeng Noegroho, Shinta Prastyanti, Bambang Widodo, Dwi Pangastuti Marhaeni &amp; Wiwik Novianti</i>	323
The role of corporate governance in moderating the effect of risk finance and intellectual capital on Islamic banks performance in Indonesia <i>Indra Siswanti, Yusliza Mohd Yusoff, Yananto Mihadi Putra &amp; Embun Prowanta</i>	327
Big data and village's SDG-based development policy (Study in Terong Village, Kapanewon Dlingo, Bantul Regency, Yogyakarta) <i>Condrodewi Puspitasari, Fadjarini Sulistyowati, B. Hari Saptaning Tyas &amp; MC. Candra R. Dibyorini</i>	339



The effect of company profitability, leverage, and size on carbon emission disclosure with environmental performance as a moderating variable (empirical study on manufacturing companies listed on the stock exchange in 2020) <i>Dinda Galuh Efendy, Ihyaul Ulum &amp; Aviani Widyastuti</i>	347
Millennial generation mental health: Self-healing process and coping strategies in the time of the pandemic <i>Moordiningsih, Sowanya Ardi Prahara &amp; Angelina Dyah Arum Setyaningtyas</i>	357
Government graphic design response to Covid-19 vaccination in Indonesia <i>Aditya Dwi Putra Bhakti &amp; Awan Setia Dharmawan</i>	366
Pedestrian development in supporting sustainable community mobility <i>Evi Satispi, Aulia Widyajasita &amp; Dini Herliani</i>	375
Murals: Art, politics, and democracy Analysis of Michel Foucault's discourse of power on the mural phenomenon "Jokowi 404: Not Found" <i>Aditya Dwi Putra Bhakti</i>	384
Smart cities in China: Addressing environmental issues <i>Inda Mustika Permata</i>	394
The metafunction of divorce mediation regulations in the supreme court regulation number 1 of 2016 as stated in the public information text <i>M. Isnaini, Setya Yuwana Sudikan, Dianita Indawati &amp; Suhartono</i>	402
The Content Language Integrated Learning (CLIL) approach is an effort to improve speaking skills at the beginner level of UMM BIPA students <i>Faizin, Setya Yuwana, Syamsul Sodiq &amp; Suhartono</i>	412
Financial inclusion and its impact on inclusive growth (Evidence from Islamic banking in Middle East countries) <i>Idah Zuhroh, Firdha Aksari Anindyntha &amp; Fitri Rusdianasari</i>	419
Author index	427

## Preface

Today's societies face two major challenges: environmental sustainability and social inclusion. According to Brundtland Report 1987, sustainable development is defined as development that meets the needs of the present without jeopardizing future generations' ability to meet their own needs. Scholars have increasingly argued for paying closer attention to the links between ecological and social sustainability and analyzing these challenges holistically. Three crucial connections should be highlighted. First, negative environmental impacts disproportionately affect poor and marginalized groups and individuals, as extensively researched in the environmental justice literature. Second, policies and measures that seek to lessen environmental harm run the danger of having a relatively greater impact on society. Third, since their lifestyles are more materialistic, energy-intensive, and travel-intensive, wealthy countries or richer households and people within countries contribute a greater share to environmental issues like climate change and local air pollution.

In addition to socially inclusive, in all areas where there are cultural, economic, political, or other differences due to the presence of people and their unique method of settling in a nation or region, social inclusion must be understood as a component of human development. The notion of social leverage is based on the fundamental idea of social inclusion. This final idea primarily alludes to the work typically done by public institutions, whose primary goal is to socially and economically integrate social groups that exhibit a high level of vulnerability. These are low-income individuals and social organizations that are struggling to survive.

As contribution from academic discourse, The Faculty of Social and Political Sciences and the Faculty of Economic and Business, Universitas Muhammadiyah Malang was held an international conference under the name, the Second International Conference on Humanities and Social Sciences (ICHSOS) 2022, on 1–2 July 2022, in Universitas Muhammadiyah Malang, East Java, Indonesia. The conference was held hybrid (online and offline) due to the pandemic with keynote speaker by Dr. Siti Nurbaya, M.Sc, Minister of Environment and Forestry Republic of Indonesia and five main speakers Jewel Andoh, Ph.D. CSIR-Forestry Research Institute of Ghana, Dr. Nik Hazimah Bt. Nik Mat, Universiti Malaysia Trengganu, Malaysia, Alam Surya Putra, Deputy Director of Environmental Governance Unit, The Asia Foundation, Prof. Dr. Tri Sulistyaningsih, M.Si, Universitas Muhammadiyah Malang and Prof. Djoko Sigit Sayogo, Ph.D., Universitas Muhammadiyah Malang.

Under the theme entitled “Environmental Issues and Social Inclusion in Sustainable Era”, the Conference gathered participants from various universities in Indonesia and other countries. The conference accepted 90 articles to be presented. There were 45 articles inside the book series published by CRC Press Balkema, Taylor & Francis Group. Hopefully that the participants of the conference will be able to dissect problems, find solutions and get alternative perspectives in preventing about environmental issues and social inclusion.



# Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

## Acknowledgements

This book has been published. We would like to thank Rector of Universitas Muhammadiyah Malang, who have supported to this event. This event is collaboration between the Faculty of Social and Political Sciences, and the Faculty of Economic and Business. All articles in this book are the final version of the paper presented in the International Conference on Humanities and Social Sciences (ICHSOS) which was held on 1–2 July 2022 through an online and offline seminar. On behalf of the committee, we would also like to thank all keynote speakers and reviewers for the contribution and dedication for this conference. All article in this book has gone through the blind review process. Finally, we would like to thank for the committee, authors, participants, and all peoples who have supported in this conference.

We hope we meet again in the next conferences.

Malang, March 1, 2023

Organizer of ICHSOS 2022  
Universitas Muhammadiyah Malang  
Indonesia



# Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

## Committee Members

### Organizing Committee

#### **Advisory Board**

Prof. Syamsul Arifin, M.Si

*Universitas Muhammadiyah Malang, Indonesia*

#### **Chairman**

Dr. Iqbal Robbie, M.M

*Universitas Muhammadiyah Malang, Indonesia*

#### **Secretary**

Chalimatuz Sa'diyah, SE., MM

Aviani Widyastuti, MSA

*Universitas Muhammadiyah Malang, Indonesia*

#### **Treasury**

Mudrifah, SE., MM

Firdha Aksari, SE., ME

*Universitas Muhammadiyah Malang, Indonesia*

#### **Technical and Program Chair**

Shannaz Mutiara Deniar, M.A

Setyo Wahyu, SE., ME

Dedik Fitra Suhermanto, M.Hub.Int

Ardik Praharjo, S.AB., M.AB

Tri Wahyu Oktavendy, SE., MSA

Khusnul Rofida, S.Pd., MM

Risky Angga, SE., ME

*Universitas Muhammadiyah Malang, Indonesia*

#### **Publication**

Ali Roziqin, M. PA

Widhiyo Sudiyono, ST., MBA

Agung Prasetyo, MSA

Ahmad Mujahid Arrozy, S.Sos., M.Sos

*Universitas Muhammadiyah Malang, Indonesia*



# Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

## Scientific Committee

Prof. Dr. Muslimin Mahmud  
*Universitas Muhammadiyah Malang, Indonesia*

Prof. Djoko Sigit Sayogo, Ph.D.  
*Universitas Muhammadiyah Malang, Indonesia*

Dr. Idah Zuhroh, M.M  
*Universitas Muhammadiyah Malang, Indonesia*

Prof. Dr. Tirta Nugraha Mursitama  
*Bina Nusantara University, Indonesia*

Suhnyuk Kim, Ph.D.  
Korea University, South Korea

Prof. Dr. Tri Sulistyaningsih, M.Si  
*Universitas Muhammadiyah Malang, Indonesia*

Dr. Salahudin, M.PA  
*Universitas Muhammadiyah Malang, Indonesia*

Prof. Amporn Tamronglak  
*Thammasat University, Thailand*





# Taylor & Francis

Taylor & Francis Group

<http://taylorandfrancis.com>

# The implementation of sustainable energy policy in Indonesia: New and renewable energy

Asep Nurjaman\*

*University of Muhammadiyah Malang, Malang, Indonesia*

**ABSTRACT:** The purposes of this study are to examine the potential new and renewable energy (NRE) sources and policy to support sustainable energy in Indonesia. This research is a type of qualitative, the data of NRE policy was analyzed by regulatory impact assessment (RIA), and NRE technology is analyzed by strength-weakness-opportunities-threats (SWOT) analysis. The results of the study show that Indonesia has many types of NRE sources; however, the target for obtaining NRE cannot be met in Indonesia. These findings have an implication for the importance of reforming policies in the energy sector. Moreover, the finding can encourage universities to conduct technological research to develop NRE, and for the government to become the basis for national energy development.

**Keywords:** NRE, Energy Policy, Sustainable Energy, Regulatory Impact Assessment (RIA), Indonesia

## 1 INTRODUCTION

Recently, the Ukraine conflict has made countries around the world aware of the importance of energy independence. Therefore, efforts are needed by countries in the world for energy sustainability by developing new and renewable energy (NRE). However, NRE generation is not developing at all, as it is a 2.5% development rate every year. Since global warming was taken after natural contracts around the world such as the Kyoto Convention, the use of fuels has been criticized to a great extent in the world. These fuels are non-renewable and can be used up (Zafar *et al.* 2019), and the use of fossil energy can also produce pollution and adversely affect climate change (Irena 2019; Kurnia *et al.* 2021). The Indonesian government has implemented NRE sources in order to overcome energy problems (Endri *et al.* 2021; Laila *et al.* 2021; Prayitno *et al.* 2021; Srinita & Effendi 2021). Indonesia has a variety of NRE sources that can be utilized, examples are mentioned in Bridle *et al.* (2018), and Endri *et al.* (2021). Despite having many NRE sources, Indonesia depends a lot on non-renewable natural resources, such as coal and petroleum as fossil energy sources (Suparjo *et al.* 2021). Moreover, the current NRE development policy is deemed urgent for Indonesia to be implemented due to the increasing need for energy (Al-Tal & Al-Tarawneh 2021; Bridle *et al.* 2018; Suparjo *et al.* 2021; Tiep *et al.* 2021; Zhakupova *et al.* 2021).

NRE has a role as an alternative resource that replaces fossil energy which cannot be renewed and is limited in number if it is used continuously (Agbonifo 2021; Tiep *et al.* 2021). Oil-type fuels have a use limit because they are limited in quantity and cannot be reproduced (Muse 2021). However, almost all industries and daily activities cannot be separated from their dependence on non-renewable energy (Asian Development Bank 2020; Ireland 2019). The exploitation of oil resources that are too large and too fast will make the supply of fuel run out more quickly (Rowley and Westwood 2003; Zafar *et al.* 2019). On the other hand,

---

\*Corresponding Author

renewable energy can also be used in a sustainable manner (known as sustainable energy) in the future (Alrikabi 2014; Plutshack *et al.* 2019).

Indeed, some works have shown promise in this area such as Bridle *et al.* (2018) and Endri *et al.* (2021). These authors showed that Indonesia has a variety of new potential energy sources that can be utilized. Meanwhile, in the implementation of energy policy, Setyowati (2020) mentioned that in Indonesia there are several regulatory barriers and regulatory uncertainty is one of the main barriers to mobilizing private climate finance for renewable rural electrification. It has a similarity to the China's case. The regulatory framework to facilitate the uptake of renewable energy is constantly changing and often inconsistent, due to the pragmatic policy (Nurjaman *et al.* 2018), lack of woman participation (Soedarwo 2014), and more concern for economic growth than green environment (Susilo 2020). The resulting regulatory uncertainty increases costs for project developers, both in terms of the time investment required to understand the implications of new regulations and costs.

## 2 RESEARCH METHOD

This study is focused on Indonesia. The country of Indonesia was chosen because it reflects various stages of economic development, the current situation of electricity generation, and the potential for renewable energy technology. Data were collected from publicly available databases. Then, various government reports and investment agency statements are reviewed to determine the potential renewable energy capacity set by the Indonesian state based on its geographic and geological characteristics. Moreover, we examined peer-reviewed journal articles accessed through the VosViewer application on current and future energy efficiency technologies. Finally, we conducted a focus group discussion (FGD) to elaborate more comprehensive data about renewable energy in Indonesia from various backgrounds of stakeholders such as academicians, researchers, and professional staff of the Indonesian parliament.

## 3 RESULTS AND DISCUSSION

Renewable energy is the processing of energy from natural processes that are sustainable and used as alternative energy. Renewable energy is environmentally friendly, thus contributing to overcoming global warming and reducing carbon dioxide emissions. Indonesia shows that it has abundant energy sources compared to its neighbors. In particular, countries such as Singapore, and Malaysia with few domestic resources can maintain reasonable economic growth, high levels of social welfare, and high GDP. Based on Government Regulation Number 79 of 2014 concerning National Energy Policy, Indonesia is targeting the use of NRE to a minimum of 23% (by 2025) and 31% (by 2050).

### 3.1 NRE technology

In 2013, renewable energy utilization was 19% of worldwide energy utilization, whereas ASEAN's energy request is anticipated to grow 2.4 times by 2040 agreeing to the 5th ASEAN Energy Outlook. In 2040, ASEAN's GDP is anticipated to have a triple increment from as it were USD2.56 trillion in 2015 and the region's add up to populace develop to over 760 million with 0.7% per year on normal compared to 630 million in 2015. Rising energy requests will impact the security of the ASEAN energy supply and the capacity to create economic value whereas these lead ASEAN to convert to a more energy-intensive economy within the locale (Veng *et al.* 2020). Meanwhile, in Indonesia, the oil demand will continue to increase and supply will decline, resulting in a very large gap between supply and demand. Because of this reason, Indonesia as a member of ASEAN is trying to develop a NRE policy that will be the best energy source to successfully replace traditional energy sources.

Currently, 80% of conventional energy is used to fulfill the general public's needs and industries. The depletion of oil and gas reserves and rapid growth in conventional energy

consumption have continuously forced us to discover renewable energy sources, like solar, wind, biomass, and hydropower, to support economic development in the future (Handayani and Ariyanti 2012). The importance of switching from non-renewable energy to renewable energy is not only decreasing the potential for oil but also decreasing prices. However, according to Sri Mulyani (Coordinating Minister for Economics), world crude oil prices are a new threat to the prospects for the 2020 State Budget (APBN) because the decline in oil prices risks depressing state revenues, especially from income tax (PPH) and non-tax state revenues (PNBP), the oil and gas sector.

In relation to this regulatory aspect was always correlated with the NRE technology (see Table 1). The government (executive and legislative) has issued many regulations related to NRE. This is based on the awareness that the use of NRE technologies is a necessity because of the impact of fossil energy which is very damaging to the environment and will eventually run out due to its limitations. Therefore, the Government of Indonesia has the commitment to use more NRE as an energy source in accordance with Law Number 30 of 2007 concerning Energy which requires the central and regional governments to encourage the use of NRE. This was also encouraged by the Paris Agreement in 2015. Its contents encourage efforts to contain global temperature increases below two degrees Celsius and develop policies to reduce gas emissions, one of the ways is by reducing the use of fossil energy and switching to NRE. Of the 196 countries that participated in the negotiation of the agreement, France is one of the leaders in terms of the policy by committing not to use coal to produce electricity by 2022. This means that France will strongly side with NRE sources.

Table 1. Strength-weakness-opportunities-threats (SWOT) analysis of NRE technologies and their implementation in Indonesia.

Strengths	Weakness
High potential of NREs in Indonesia, specifically solar energy.	High expenses for investment.
Since the system is modular, it's suitable for remote locations.	Lack of motivation for private section to engage.
Reduction of environmental contamination.	Absence of stable effective policies and promising incentives.
Competitive and low-cost technologies for domestic application.	Dearth of necessary cooperation between various private and governmental sections.
Abundant well-equipped and powerful colleges and research centers in this field.	Absence of research sectors and universities in development processes of technology.
Availability of oil export.	Economic instability of the country specifically fluctuation of foreign currencies.
Opportunities	Threats
Engagement and development of private section	Low prices of fossil fuels.
Stepping toward economical and sustainable development.	Enormous accessible reservoirs of fossil fuels, especially in shared fields with neighboring countries.
Creation of potential market for technology introduction and maturation.	Personalized and impromptu decision making by managers.
Reduction in reliance on fossil fuels.	Lack of understanding of the need for development of this sector.
Possibility for energy export to neighboring countries.	Shortage of social awareness.
Possibility of scientific and practical development of research centers and colleges for initiation of essential technologies.	Political issues such as forced sanctions make investors lack of motivation to continue.

Sources: Adopted from Aien and Mahdavi (2020)

### 3.2 Policy for sustainability energy in Indonesia

In the APEC 1 forum held in Beijing on September 2, 2014, the Indonesian minister of energy agreed to target doubling the share of NRE in the energy mix by 2030. However, according to Adzikri *et al.* (2017) and Bridle *et al.* (2018), Indonesia has not met the percentage target of the energy mix as stated in the APEC1 forum, with a growth rate of 2.5% per year. Meanwhile, the target of installing a capacity of 6235 GW is estimated to be achieved by 2040 with the share of renewable energy reaching 35% (Zafar *et al.* 2019). The regulatory framework to facilitate the uptake of NRE is constantly changing and often inconsistent, due to the pragmatic policy (Nurjaman *et al.* 2018), lack of woman participation (Soedarwo 2014), and more concern for economic growth than green environment (Susilo 2020). The resulting regulatory uncertainty increases costs for project developers, both in terms of the time investment required to understand the implications of new regulations and costs (Gil-Garcia & Sayogo 2016). The literature shows that policy failure is the main problem for not meeting energy needs from renewable sources. Therefore, the purpose of this paper was to analyze the NRE sources and the implementation of energy policy in Indonesia, without considering the type of renewable energy individually.

Indonesia's policy on NRE is quite clear, similar to other countries, especially in the field of nuclear energy (Panina *et al.* 2020). The Indonesian government has made various policies on NRE sources to address energy problems (Endri *et al.* 2021; Laila *et al.* 2021; Prayitno *et al.* 2021; Srinita & Effendi 2021). The NRE development policy is deemed urgent to be implemented because of the increasing need for energy not only in Indonesia but also in other countries in the world (Al-Tal & Al-Tarawneh 2021; Bridle *et al.* 2018; Suparjo *et al.* 2021; Tiep *et al.* 2021; Zhakupova *et al.* 2021), nevertheless, the policy implementation was a failure due to lack of political commitment and inconsistency in the implementation. Indonesia has not met the target of reducing fossil energy sources and until now, it depends a lot on non-renewable natural resources, such as coal and petroleum as energy sources (Suparjo *et al.* 2021). However, the Indonesian government is aware that these resources are non-renewable and can be exhausted (Zafar *et al.* 2019), and the use of fossil energy can also produce pollution and adversely affect climate change (Irena 2019; Kurnia *et al.* 2021).

According to the Indonesian Energy Policy (Kebijakan Energi Nasional, KEN), in 2025, estimated Indonesia's total energy demand will increase to 2.41 billion BOE (Barrel of Oil Equivalent) or an increase of 84% of the total national energy demand in 2013 which reached 1.31 billion BOE (Adzikri *et al.* 2017). To fulfill the need for energy, various kinds of alternative energy sources are explored as much as possible, but not all of them are easy to achieve. This is constrained by several problems such as geographic challenges, coordination between central and regional governments, renewable cost technology, incentives, public perception, and institutional capacity. Apart from technological constraints, values, and public perceptions often clash (Abolhosseini *et al.* 2014).

Currently, Indonesia also has a road map for national energy development with the National Energy Policy stipulated in Government Regulation No. 79/2014 which targets a NRE mix of 23 percent by 2025 and 31% by 2050. Referring to these regulations, it is actually very difficult for Indonesia to achieve. In this year alone, the percentage of new renewable energy is only 11% of the national energy mix. The difference between planning and facts in the field has made Indonesia start to boost the use of new renewable energy using solar power for rural and archipelagic areas. Indonesia is also developing geothermal power which is estimated to have a potential of around 29 GW which is currently being optimized by PT Pertamina Geothermal Energy of 437 MW with 12 working areas. In addition, the government has also started to build a Wind Power Plant (Pembangkit Listrik Tenaga Bayu, PLTB) with a capacity of 75 MW in Sidrap, South Sulawesi.

An overall system for environmentally friendly power improvement is available in Indonesia. For instance, Law 17 of 2007 backs environmentally friendly power project sending by executing a public long-term development plan making financing for sustainable power projects. Moreover, Governmental Regulation 79 of 2014 accommodates the decrease of Indonesia's petroleum derivative reliance and urges the shift to perfect and sustainable power sources. It likewise incorporates

arrangements for the increase of power supply at the public level and forgiving energy access explicitly in the distant rustic spaces of Indonesia. Mix Renewable Energy (MRE) is remembered for the country's meaning of sustainable power, and, consequently, its objective of sustainable power advancement incorporates MRE exercises, including pilot testing, in anticipation of full-scale commercialization. The National Energy Council is now investigating its public energy and intends to join MRE into Indonesia's public energy blend (Quirapas and Taeihagh 2021).

Based on these regulations, the government's efforts to encourage the achievement of the NRE target are still facing challenges, including in relation to the use of support from the State Revenue and Expenditure Budget (Anggaran Pendapatan dan Belanja Negara, APBN) which has not been optimal and the determination of electricity rates based on the Power Purchase Agreement of Electricity. This causes investment in the NRE sector to be considered less profitable or unattractive. Therefore, the government feels the need to identify factors that can encourage investors to invest in the EBT sector. One of them is the identification of the effect of fiscal incentives on investment in EBT power plants based on the type of EBT, which can then be used in making adjustments to the calculation of the economic price of the EBT electricity selling price.

## 6 CONCLUSION

Indonesia as a country located on the equator has abundant energy sources, including both fossil and non-fossil energy sources. However, until now, most of the energy produced and used comes from fossils, amounting to 95%. With a steady and strong rate of economic growth in recent years, energy demand will continue to increase. The high level of dependence on fossil energy, which is relatively limited in number, can trigger an energy crisis in Indonesia. Therefore, the issue of sustainable energy will continue to be a major concern of the government in the future, especially with the increasing problem of environmental impacts due to burning fossil energy for various national socio-economic activities. Renewable energy is one of the energy sources that can meet energy needs and contribute to the national energy mix and help mitigate the impacts of global climate change. Furthermore, as an energy resource, almost the entire world has utilized renewable energy as a strategic energy source to anticipate the energy crisis.

## REFERENCES

- Abolhosseini, S., Heshmati, A., & Altmann, J. (2014). A Review of Renewable Energy Supply and Energy Efficiency Technologies. *IZA Discussion Paper*, (8145).
- Adzikri, F., Notosudjono, D., & Suhendi, D. (2017). Strategi Pengembangan Energi Terbarukan di Indonesia. *Jurnal Online Mahasiswa (Jom) Bidang Teknik Elektro*, 1(1), 1–13. Retrieved from <http://jom.unpak.ac.id/index.php/teknikelektro/article/view/667>
- Agbonifo, P. E. (2021). Renewable Energy Development: Opportunities and Barriers within the Context of Global Energy Politics. *International Journal of Energy Economics and Policy*, 11(2), 141–148. <https://doi.org/10.32479/ijee.10773>
- Aien, M., & Mahdavi, O. (2020). On the Way of Policy Making to Reduce the Reliance of Fossil Fuels: Case Study of Iran. *Sustainability (Switzerland)*, 12(24), 1–28. <https://doi.org/10.3390/su122410606>
- Alrikabi, N. K. M. A. (2014). Renewable Energy Types. *Journal of Clean Energy Technologies*, 2(1), 61–64. <https://doi.org/10.7763/jocet.2014.v2.92>
- Al-Tal, R., & Al-Tarawneh, A. (2021). The Impact of Government Effectiveness and Political Stability on Energy Consumption in the Selected Mena Economies. *International Journal of Energy Economics and Policy*, 11(2), 1–6. <https://doi.org/10.32479/ijee.10786>
- Asian Development Bank. (2020). *Renewable Energy Tariffs and Incentives in Indonesia: Review and Recommendations*. Retrieved from <https://www.adb.org/publications/renewable-energy-tariffs-incentives-indonesia>
- Bridle, R., Gass, P., Halimajaya, A., Lontoh, L., McCulloch, N., Petrofsky, E., & Shancez, L. (2018). Missing the 23 Per Cent Target: Roadblocks to the Development of Renewable Energy in Indonesia.
- Endri, E., Rinaldi, M., Ian, D. A., Saing, B., & Aminudin, A. (2021). Oil Price and Stock Return: Evidence of Mining Companies in Indonesia. *International Journal of Energy Economics and Policy*, 11(2), 110–114. <https://doi.org/10.32479/ijee.10608>



- Gil-Garcia, J. R., & Sayogo, D. S. (2016). Government Inter-organizational Information Sharing Initiatives: Understanding the Main Determinants of Success. *Government Information Quarterly*, 33(3), 572–582. <https://doi.org/https://doi.org/10.1016/j.giq.2016.01.006>
- Handayani, N. A., & Ariyanti, D. (2012). Potency of Solar Energy Applications in Indonesia. *International Journal of Renewable Energy Development*, 1(2), 33–38. <https://doi.org/10.14710/ijred.1.2.33-38>
- Ireland, S. E. A. of. (2019). Renewable Energy in Ireland. *Sustainable Energy Authority of Ireland*, 65–81. Retrieved from <https://www.seai.ie/publications/Renewable-Energy-in-Ireland-2019.pdf>
- Irena. (2019). *Climate Change and Renewable Energy: National Policies and the Role of Communities, Cities and Regions*. Retrieved from [www.irena.org](http://www.irena.org)
- Kurnia, P., Emrinaldi Nur, D. P., & Putra, A. A. (2021). Carbon Emission Disclosure and Firm Value: A Study of Manufacturing Firms in Indonesia and Australia. *International Journal of Energy Economics and Policy*, 11(2), 83–87. <https://doi.org/10.32479/ijeeep.10730>
- Laila, N., Rusydiana, A. S., Irfany, M. I., Imron, H. R., Srisusilawati, P., & Taqi, M. (2021). Energy Economics in Islamic Countries: A Bibliometric Review. *International Journal of Energy Economics and Policy*, 11(2), 88–95. <https://doi.org/10.32479/ijeeep.10763>
- Muse, B. O. (2021). Analysis of CO<sub>2</sub> Emission and Economic Ggrowth as Potential Determinants of Renewable Energy Demand in Nigeria: A Nonlinear Autoregressive Distributed Lags Approach. <https://doi.org/10.32479/ijeeep.11306>
- Nurjaman, A., Suprpto, B., Masmuh, A. (2018). Social Sciences & Humanities Nationalist Vs Islamic: *The Dynamic of Politik Aliran in Post Suharto Indonesia*, 26(3), 2009–2020. Retrieved from [http://www.pertanika.upm.edu.my/regular\\_issues](http://www.pertanika.upm.edu.my/regular_issues)
- Panina, O. V., Prokofiev, S. E., Barmenkova, N. A., Krasnyukova, N. L., & Kushchev, N. P. (2020). Prospects of Nuclear Energy Development in Asia: Comparison with “Green Energy.” *International Journal of Energy Economics and Policy*, 10(6), 123–131. <https://doi.org/10.32479/ijeeep.9983>
- Plutshack, V., Sengupta, S., Sahay, A., & Viñuales, J. E. (2019). New and Renewable Energy Social Enterprises Accessing Government Support: Findings from India. *Energy Policy*, 132(July 2018), 367–378. <https://doi.org/10.1016/j.enpol.2019.05.009>
- Prayitno, G., Hakim, A. N., & Meidiana, C. (2021). Community Participation on the Self Help Group of Methane Gas (Biogas) Management as Renewable Energy in indonesia. *International Journal of Energy Economics and Policy*, 11(1), 200–211. <https://doi.org/10.32479/ijeeep.10595>
- Quirapas, M. A. J. R., & Taeihagh, A. (2021). Ocean Renewable Energy Development in Southeast Asia: Opportunities, Risks and Unintended Consequences. *Renewable and Sustainable Energy Reviews*, 137 (September), 110403. <https://doi.org/10.1016/j.rser.2020.110403>
- Rowley, W., & Westwood, A. (2003). The Need for Renewable Energy. *Petroleum Review*, 57(676), 26–28.
- Setyowati, A. B. (2020). Mitigating Energy Poverty: Mobilizing Climate Finance to Manage the Energy Trilemma in Indonesia. *Sustainability (Switzerland)*, 12(4). <https://doi.org/10.3390/su12041603>
- Soedarwo, V. S. D. (2014). Political Ideology Meaning and Patriarchal Ideology of Female Politicians in Indonesia: A Case in Malang. *Procedia Environmental Sciences*, 20, 486–495. <https://doi.org/10.1016/j.proenv.2014.03.061>
- Srnita, & Effendi, K. A. (2021). Energy Policy Analysis, Monetary and Fiscal on Inflation Volatility in Indonesia. *International Journal of Energy Economics and Policy*, 11(2), 309–314. <https://doi.org/10.32479/ijeeep.10841>
- Suparjo, S., Darma, S., Kurniadin, N., Kasuma, J., Priyagus, P., Darma, D. C., & Haryadi, H. (2021). Indonesia's New Sdgs Agenda for Green Ggrowth – Emphasis in the Energy Sector. *International Journal of Energy Economics and Policy*, 11(3), 395–402. <https://doi.org/10.32479/ijeeep.11091>
- Tiep, L. T., Huan, N. Q., & Hong, T. T. T. (2021). Energy Efficiency: Determinants and Roles on Sustainable Development in Emerging Country. *International Journal of Energy Economics and Policy*, 11(2), 7–22. <https://doi.org/10.32479/ijeeep.10717>
- Veng, V., Suryadi, B., Pranadi, A. D., & Shani, N. (2020). A Review of Renewable Energy Development and Its Policy Under Nationally Determined Contributions in ASEAN. *International Journal of Smart Grid and Clean Energy*, 149–161. <https://doi.org/10.12720/sgce.9.1.149-161>
- Zafar, M. W., Shahbaz, M., Hou, F., & Sinha, A. (2019). From Nonrenewable to Renewable Energy and Its Impact on Economic Growth: Silver Line of Research & Development Expenditures in APEC Countries. *Journal of Cleaner Production*, 212(90611), 1166–1178.
- Zhakupova, A., Aigerim, L., Elmira, S., Dinara, S., & Azamat, Z. (2021). Impact of the Adopted Financial Processes for Carrying Out Green Energy Projects in Georgia. *International Journal of Energy Economics and Policy*, 11(2), 57–61. <https://doi.org/10.32479/ijeeep.10766>

# The effect of sustainability report disclosure on company value with profitability as a moderating variable

Muhammad Wildan Affan\* & Kresnalan Wicaksana

*Faculty of Economics and Business, University of Muhammadiyah Malang, Malang, Indonesia*

**ABSTRACT:** This study aims to the effect of the Sustainability Report on Firm Value with profitability as a moderating variable. The formulation of the problem in this study is that sustainability report disclosure has an effect on firm value, and profitability has an effect on the relationship between sustainability report and firm value. The population used in this study are companies listed on the ESG Sector Leaders IDX KEHATI index in 2021. The sample in this study was 37 companies determined by the purposive sampling technique. The research method used in this research is quantitative associative. The data analysis technique used is simple linear regression analysis. The results of the study found that the Sustainability Report has an effect on firm value and profitability has an influence on the relationship between the sustainability report and firm value.

*Keywords:* Sustainability report, firm value, profitability

## 1 INTRODUCTION

Disclosure of information openly about the company is very important, especially for public companies. This is done as a form of accountability and transparency of the company to shareholders. Disclosure of this information are used for consideration in decision-making by stakeholders. All companies that have been listed on the Indonesia Stock Exchange should comply with the submission of financial statements that have passed the audit results by the Public Accounting Firm (KAP) before the financial statements are published to the public.

Providing information to the public is not limited to financial statements. Disclosure in general terms and even in environmental responsibility is no less important. Environmental responsibility also has a close relationship with sustainable development. This is because sustainable development is carried out with one of the principles, namely not to damage the environment so that environmental benefits are not reduced in the future.

Companies that provide good disclosure will have added value, especially for stakeholders. If a company has good trust from the community, it will be easier to run the company. Good financial reports and disclosures as well as appropriate environmental responsibility will make investors invest in the company. This has a positive impact because it will make it easier for the company to expand and develop.

The value of a company is very important, both for internal parties and stakeholders. Because the high value of the company will be followed by the prosperity of investors. This is in line with the main goal of a company going public, which is to enable the public to participate in the company and increase the wealth of company owners or shareholders.

Research conducted by Ethika, Azwari & Muslim (2019) found that environmental accounting disclosures made by companies had a significant positive effect, but

---

\*Corresponding Author



environmental performance had a significant negative effect on firm value. Likewise, the research conducted by Amalia & Wahidahwati (2021) found that good corporate governance and financial performance had a positive effect, while intellectual capital disclosure and leverage did not affect firm value. From the above discussion, it shows that disclosure is something that can encourage company value. However, companies must also assist the government in driving the economy and development, whereas in sustainable development, it is not only the task of the government alone (Karyanto & Martiana 2020).

Based on the background and description above, the researcher will analyze the effect of sustainability report disclosure on firm value by using profitability as a moderating variable. It becomes interesting to study where the government is committed to continuing to carry out sustainable development and the growth rate of capital market investors in Indonesia. In contrast to previous studies, this study used a sample of all companies listed on the IDX KEHATI ESG Sector Leaders index in 2021.

## 2 LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Stakeholders have an important role in the sustainability of a company. Because stakeholders have the power to control a resource needed in the process of operating a company's activities. Therefore, companies must have good relationships with stakeholders. This can be done by accommodating existing wants and needs.

A sustainability report is one way to maintain the interests and relationships of each party so that they are well maintained. With the publication of a sustainability report, the company will provide transparent information about the company's position and activities in the economic, environmental, and social aspects so that the performance of a company can be directly assessed by various parties such as the government, community, community organizations, media, especially by creditors and investors. As they have great power over the company's operational activities, they will be careful and sensitive enough to every company activity so that it is maintained and no negligence can harm many parties, including them.

GRI (Global Reporting Initiative) has established several principles for the preparation of the sustainability report. These principles are important for sustainability reporting, therefore all organizations must apply these principles in the preparation of sustainability reports. In outline, the principles are divided into two groups: those that determine the quality of the sustainability report and those that determine its content.

The principles for determining the quality of the sustainability report are as follows:

1. Comparability  
An organization must collect, select and report information consistently. A report should be presented in a way that allows stakeholders to analyze changes in the organization's activities over time and that can support the analysis relative to other organizations.
2. Balance  
A report must reflect the positive and negative aspects of the organization's activities to enable a justified assessment of the activities of an organization as a whole.
3. Clarity  
An organization must be able to make information available in a way that is easy to understand and understandable, while also being accessible to the stakeholders who will use the sustainability report.
4. Accuracy  
The information contained in the report must be strong and accurate and detailed for users and stakeholders that can be used to assess the work of the organization.
5. Reliability  
An organization must collect, compile, record, disclose, and analyze the information and processes that will be used to prepare the report so that the report can be tested and

this will determine the quality and materiality of the information in the sustainability report.

#### 6. Punctuality

An organization in making reports on a regular schedule so that information will be available on time for users and stakeholders to make the right decisions.

Profitability is a way to find out if the company is producing and getting profits or profits within a certain period, so we need a tool that can assess it. These tools are financial ratios (Rivandi 2021). Profitability is the main factor in the company with regard to the results obtained by the company through its business activities. As more investors become more interested in the company, the company's share price rises. The high net profit generated by a company attracts more investors to invest in the company. Companies can increase profits in terms of asset sales and capital.

Companies that have been listed in the stock market must report their financial statements every year. Usually, the value of a company on the stock market does not only reflect the company but also reflects the public's interest in the company. Suranto & Walandouw (2017) stated that "The market price of the company itself. In the stock exchange, market price means the price investors are willing to pay for each share of a company's stock." Therefore, firm value is the investor's perception of the company which is always associated with stock prices.

Basically, the value of the company is something that becomes important information for stakeholders. Because the existing information can be used as an overview of the performance of a company. If a company's value increases, the stakeholders will be willing to invest their capital in the target company. With this investment, stakeholders expect the company to increase from the investment. Usually, the value of the company is reflected in several aspects such as increasing the quality of shares and increasing the quality of the products or services produced. If this increases, the value of the company will also feel good and increase as well.

#### 2.1 *Effect of sustainability report on firm value*

The overall disclosure of the sustainability report by the company is expected to provide concrete evidence that the production process carried out by the company is not only profit-oriented but also pays attention to social and environmental problems. (Imaniar Arvida Natalia 2022). Research conducted by Imaniar Arvida Natalia (2022) shows that the disclosure of the Sustainability Report and environmental performance has a positive effect on the value of the company. Firm value is the value that investors are willing to pay for a company. The higher the value of the company, the greater the level of welfare of the shareholders of the company. One of the company's goals is to improve the welfare of the company's internal and external parties. However, corporate responsibility is not limited to liability holders. Companies also have a responsibility to society. Therefore, the good image of the company will usually affect the value of a company. Because the company has a good image, investors will not hesitate to invest in the company. Melyana & Syafruddin (2015) stated that the level of voluntary disclosure had a positive effect on firm value, so the higher the level of disclosure, the higher the value of a company. According to research conducted by Latifah & Luhur (2017), it can be concluded that from partial testing, the sustainability report (SR) disclosure variable partially affects the company value as proxied by Tobin's Q.

H1: Sustainability Report Disclosure Has a Significantly Positive Effect on Company Value.

The effect of profitability on the relationship between sustainability report disclosure and firm value

In accordance with the need to create demand for the company, company managers will be motivated to meet user needs and avoid the negative effects of earnings management. In this context, there is an inseparable relationship between earnings quality and optional

accounting disclosures such as sustainability reports as bearers of information that reduce asymmetry in the delivery of information. Companies with low earnings quality have little incentive for optional disclosures and thus investors will view them as less credible. In some of the literature that the researchers found, there were several research results on the effect of profitability on firm value. According to Rivandi & Septiano (2021), profitability has a positive and significant influence on firm value in manufacturing companies listed on the IDX. From the literature, it can be implied that the higher the profitability, the more it will encourage an increase in firm value.

H2: Profitability has an influence on the relationship between sustainability reports and firm value.

### 3 RESEARCH METHODS

This type of research is an associative type of research with the independent variable being the disclosure of the Sustainability Report. The population in this study are companies listed on the ESG Sector Leaders Index IDX KEHATI as many as 48 companies and report their financial statements and report sustainability reports. In determining the sample, the researcher uses a technique, namely purposive sampling, which involves taking a sample based on certain considerations or criteria based on the interests or objectives of the researcher. There are several criteria used in the selection of the sample as follows:

Publish annual financial reports for the period 2020.

1. Have complete information needed for researchers, namely balance sheets and income statements.
2. The company publishes audited financial statements.
3. The company publishes a sustainability report to external parties or stakeholders.
4. Operational Definition and Measurement of Variables Dependent Variable

The dependent variable is the dependent variable, which is the quality of financial statements and firm value of the company.

In this study, researchers define the value of a company as market value. Because the prosperity of shareholders is determined by the value of the company, if the share price is high, the prosperity of shareholders will increase, this is in line with Aini's research (2020). For company value, researchers use Tobin's Q measuring instrument, reliable in measuring the effectiveness of the management in utilizing and managing Damayanthi's resources (2019). The following is the formula for measuring Tobin's Q according to Melani & Wahidahwati (2017).

$$\text{Tobin's Q} = ((\text{MVE} + \text{DEBT}))/\text{TA}$$

Information:

Tobin's Q : Company Value

MVE : Market Value of Equity (Equity Market Value = year-end closing share price × number of shares outstanding at the end of the year)

DEBT: Total Company Payable

TA: Total Assets of the Company Independent Variable

Based on GRI-G4, the disclosure of the sustainability report in Corporate Social Responsibility (CSR) is defined as a report on corporate responsibility related to social activities carried out by the company covering several indicators, namely economic, environmental and social. Sustainability reports can be published separately or as one in the Damayanthi Annual Report (2019). Disclosure of sustainability reports in CSR uses the Sustainability Report Disclosure Index (SRDI) measurement with the GRI-G4 standard which includes 91 Damayanthi disclosure items (2019). Giving a score of one if an item is

disclosed and zero if it is not disclosed. Next, the scores are added up to obtain the overall score for each company (Latifah & Luhur 2017). The following is a formula for measuring the disclosure of sustainability reports in CSR.

$$SRDI = V/M$$

Information :

SRDI: Sustainability Report Disclosure Index V: Number of items revealed

M: Total maximum score (GRI-G4 = 91 items)

### 3.1 *Moderating variables*

Profitability is the company's ability to generate profits from business activities carried out. In measuring the value of profitability, researchers use return on equity (ROE) which shows the company's ability to generate profits from the use of all its resources or assets. If the ROE ratio is high, then the company has a good performance in generating profits.

$$ROE = \text{PROFIT}/\text{EQUITY}$$

### 3.2 *Data analysis techniques*

In this study, the data analysis technique used by the researcher is a simple linear regression analysis technique, simple linear regression is a method used to see the relationship between one independent variable (free) and has a straight-line relationship with the dependent variable (bound). This model is suitable for use in this study because the researcher wants to examine the relationship between sustainability reports and firm value and sustainability reports on financial reporting quality. The stages in data analysis in this study are:

#### 1. Descriptive Statistics

This descriptive statistical test is used to provide information about the general description of each research variable. This descriptive statistical analysis provides an overview of the data seen from the minimum value, maximum average, and standard deviation of each research variable.

#### 2. Classical Assumption Test

In the classical assumption test, it is a requirement to perform simple linear regression, where this test must be fulfilled so that the parameter estimates used and the regression coefficients are not biased.

#### 3. Hypothesis Test

The purpose of hypothesis testing is to examine the effect of the sustainability report on firm value and the sustainability report on the quality of financial reports. For this test, the t-test will be used. The t-test or what is known as the partial test is to test the truth or falsity of a hypothesis. This test can be known by comparing the t count with the t table or by looking at the significance column in each t count. In this study, the method used was by looking at the significance column for each t count.

## 4 RESULTS AND DISCUSSION

Based on the results of sample selection using the purposive sampling technique, we used several criteria. Companies listed on the IDX KEHATI ESG Sector Leaders index in 2021 consist of 48 companies. Based on the results of determining the sample with certain criteria, the sample that has been obtained can be seen in Table 1.

Based on the information listed in Table 1, it can be concluded that the sample that will be used in this study with predetermined sample criteria is 37 companies. The list of company names used as samples is presented in Appendix 1.

Table 1. Results of research sample selection criteria.

No	Research Sample Criteria	Jumlah
1	Company Listed On IDX KEHATI ESG Sector Leaders Index 2021	48
2	The company publishes a sustainability report to external parties/stakeholders	(11)
Amount		37

#### 4.1 Data analysis and hypothesis testing

##### 1. Classical Assumption Test

###### a) Normality Test

Table 2. Normality test results X against Y.

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		37
Normal Parameters <sup>a,b</sup>	Mean	.0000000
	Std. Deviation	.16420896
	Absolute	.112
Most Extreme Differences	Positive	.112
	Negative	-.101
Kolmogorov-Smirnov Z		.682
Asymp. Sig. (2-tailed)		.741

<sup>a</sup>Test distribution is Normal.

<sup>b</sup>Calculated from data.

The data presented is normally distributed if the significance number is greater than 0.05. Table 2 has shown that the significant number of the One-Sample Kolmogorov Smirnov Test for normality is 0.741. This means that the regression model has data that are normally distributed.

###### a) Simple Linear Regression Result

Table 3. Simple linear regression X against Y1 and X against Y2.

Coefficients <sup>a</sup>							
Model	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	.385	.130		2.959	.005		
<i>Sustainability Report</i>	.659	.277	.373	2.379	.023	1.000	1.000

- Based on Table 3, some results have been processed in the form of columns, one of the columns, Unstandardized Coefficients part B, represents the gain from a simple linear regression test shown in the following equation:

$$Y = 0,385 + 0,659X$$

From the value of the equation above, it can be interpreted that the constant ( $\alpha$ ) is 0.385, while the value is 0.659. So that it can be interpreted that the coefficient is the coefficient of the regression direction and states the average change of the Y variable for each change in the X variable of units. The change is an increase if is positive and a decrease if it is negative. So from the above equation, it can be interpreted as:

1. The constant of 0.385 states that if there is no value then the firm value variable, ( $\alpha$ ) is 0.385.
2. The regression coefficient of 0.659 states that for every additional disclosure in the sustainability report, the value of the firm value variable increases by 0.659.
3. Hypothesis Test

In this study, the t-test was used. The simple linear regression equation also displays a significance test with the t-test which is used to determine whether there is a significant effect on the Sustainability Report (X) variable itself on the Variable (Y) Quality of Financial Statements and Firm Value.

Table 4. T-test results with financial statement quality and firm value as dependent variables.

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.385	.130		2.959	.005
<i>Sustainability Report</i>	.659	.277	.373	2.379	.023

1. From the output of the processed data above, it can be seen that the value of the t count is 0.023. So with the value of t count  $< 0.05$ , it means that H2 is accepted. This means that there is a significant or significant effect on the Sustainability Report (X) variable on the Firm Value variable (Y2).

#### 4. Interaction Test

Interaction test results

In regression equation 2 by testing the interaction between the results of the hypothesis, it can be seen by comparing the results of R square from equations 1 and 2.

From the results of the interaction test of the two equations, it can be seen that the value of R square in equation 2 is 0.004 greater than equation 1 which can be seen in the table of 0.139. This means that ROE can moderate or strengthen the influence of the relationship between Sustainability Report Disclosures on Company Value.

Table 5. Parallel 1.

Model	R	R Square	Adjusted	R Square	Std. Error of the Estimate
1	.373 <sup>a</sup>	.139	.115	.16654	

## 5 DISCUSSION

### 5.1 *Effect of Sustainability Report (SRDI) on company value*

In this study, the Sustainability Report is proxied by Sustainability Report Disclosure Index (SRDI). Based on the results of the t-test in Table 5, the Sustainability Report has a significant influence on the Firm Value variable. So from the results of the t-test, it can be concluded that H1 in this study is accepted.

Table 6. Parallel 2.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.379 <sup>a</sup>	.144	.089	.12281

The results of this study are in line with research conducted by Anggaraini, Morine; Yulia Syafitri (2022). In this study, it was concluded that the Sustainability Report has a significant positive effect on firm value. In addition, the Legitimacy Theory and Stakeholder Theory also relate to the same thing. Here, the theory of legitimacy is a process that leads to an organization that is seen as legitimate, this organization seeks to ensure that they are still operating within the limits and norms that apply in the region and in the community of each activity that is considered legitimate Ponny (2011). In addition, in the Stakeholder theory, it is said that the company should maintain relationships with stakeholders. Because the company is not only responsible to internal but also to external parties. A sustainability report is one way to maintain the interests and relationships of each party so that they are well maintained. With the Sustainability Report, the company will provide transparent information about the company's position and activities on the economic, environmental, and social aspects so that the performance of a company can be assessed directly by various parties such as the government, organizations, society, media, especially by creditors and investors because both those parties who are very thorough and sensitive in seeing and assessing the activities and performance of a company.

Based on the results of the interaction test in the first and second equations, company profitability can be moderated by strengthening the influence of the relationship between sustainability reports on firm value. This is in line with a signal theory which is a measure of company management that provides clues or information to investors about management's view of the company's prospects. This theory states that investors can distinguish between high-value and low-value companies. A company that is always profitable shows that it is in relatively good shape and promising compared to other companies. A company with low profitability.

## 6 CONCLUSION

Based on the discussion and research conducted by researchers at companies listed on the 2021 KEHATI IDX ESG Sector Leaders Index regarding the effect of the Sustainability Report on the Quality of Financial Statements and Company Value, it can be concluded as follows:

1. The Sustainability Report has a significant effect on Company Value in companies listed on the IDX KEHATI ESG Sector Leaders index in 2021. Therefore, the second hypothesis which states that the Sustainability Report has a significant influence on company value is accepted.
2. Profitability influences the relationship between the sustainability report and firm value and strengthens the relationship between the sustainability report on firm value.

## REFERENCES

- Aini, S.N. (2020). The Influence of Company Size, Profitability, Company Age, and Leverage on Disclosure of Sustainability Reports. 1–19. <https://lib.unnes.ac.id/39075/>
- Amalia, E. R., & Wahidahwati. (2021). The Influence of Intellectual Capital Disclosure, Financial Performance, GCG, and Leverage on Firm Value. *Journal of Accounting Science and Research*, 10(2).
- Anggaraini, Morine; Yulia Syafitri, M. D. (2022). The Effect of Dividend Policy and Sustainability Report on Company Value. *Pareso Journal*, Vol. 4, No. 1, March 2022, p. 1–20, 4(1), 1–20.
- Damayanthi, I. G. A. E. (2019). The Phenomenon of Factors Affecting Firm Value. *Scientific Journal of Accounting and Business*, 208. <https://doi.org/10.24843/jiab.2019.v14.i02.p06>
- Ethika, E., Azwari, M., & Muslim, R. Y. (2019). Analysis of the Effect of Environmental Accounting Disclosures and Environmental Performance on Firm Value (Empirical Study on LQ- 45 Index Companies Listed on the IDX). *Journal of Accounting and Auditing Studies*, 14(2), 122–133. <https://doi.org/10.37301/jkaa.v14i2.15>
- Imaniar Arvida Natalia, Y. N. S. (2022). Analysis of the Effect of Sustainability Report Disclosure on Company Value in Non-financial Companies Listed on the Indonesia Stock Exchange (IDX) Period 2017. Accounting Study Program, Faculty of Economics, Atma Jaya Catholic University of Indonesia, 1–13.
- Junaidi, J. (2019). Accounting Theory. *Journal of Education*.
- Karyanto, B., & Martiana, R. (2020). The Role of Accountants and Companies Towards the 2030 Sustainable Development Goals (SDGs). *Jurnal Studia*, 8(1), 109–120.
- Latifah, S. W., & Luhur, M. B. (2017). The Effect of Sustainability Report Disclosure on Firm Value and Profitability as Moderating Variables. *Journal of Accounting and Business*, University of Muhammadiyah Malang, 17(1), 13–18. [http://eprints.umm.ac.id/58102/7/Latifah Luhur – Sustainability Report Profitability Firm Value.pdf](http://eprints.umm.ac.id/58102/7/Latifah%20Luhur%20-%20Sustainability%20Report%20Profitability%20Firm%20Value.pdf)
- Melani, S., & Wahidahwati. (2017). The Influence of CSR and GCG on Firm Value with Profitability as Moderating Variable. *Journal of Accounting Science and Research*, 6(10), 1–24.
- Melyana, R., & Syafruddin, M. (2015). The Effect of Voluntary Disclosure on Company Value. *Diponegoro Journal of Accounting*, 4(2012), 1–11.
- Rivandi, M., & Septiano, R. (2021). The Influence of Intellectual Capital Disclosure and Profitability on Firm Value. *Trisakti Journal of Accounting*, 8(1), 123–136. <https://doi.org/10.25105/jat.v8i1.7631>
- Suranto, V., & Walandouw, S. (2017). Analysis of the Effect of Capital Structure and Financial Performance on Firm Value in Banking Companies on the Indonesia Stock Exchange. *EMBA Journal: Journal of Economic Research, Management, Business And Accounting*, 5(2), 1031–1040. <https://doi.org/10.35794/emba.v5i2.16059>



# Human resources management: Bibliometric analysis of green training

Nurul Asfiah, Ratya Shafira Arifiani & Titiek Ambarwati  
*Universitas Muhammadiyah Malang, Malang, Indonesia*

**ABSTRACT:** This study aims to determine the practice of human resource management, especially aspects of green training. This research was conducted in June 2022 by analyzing data from the Scopus Database through Harzing's Publish or Perish. Data were processed and analyzed using the VOSViewer software to determine the bibliometric development map of research about green training. The results show that the number of studies on green training will increase in 2020. The citation presentation shows that the Journal of Cleaner Production is more often used for publications with the theme of green training with high citations so that it can be used as a reference for further research.

**Keywords:** Green human resource management practices, green training, bibliometric

## 1 INTRODUCTION

Environmental issues are a major concern in many businesses nowadays, particularly while performing managerial duties. Concern for environmental issues prompted the corporation to change its concept and begin using green practices. Human resource management is one of the management functions that play an essential part in an organization's long-term viability. The human aspect, in this case, human resource management, also determines an organization's success (Dessler 2015). Human resource management is currently paying attention to environmental factors to produce sustainable firm performance, which is required to raise employee awareness for improved quality and dedication to environmental sustainability referred to as Green Human Resource Management (GHRM). GHRM is the implementation of human resource policies and practices in a sustainable business organization (Marhatta & Adhikari 2013). According to research, GHRM is a more "green" human resource policy and practice (Arulrajah & Opatha 2015). Companies are concerned about social responsibility, particularly environmental challenges (Rajnoha & Lesníková 2016). In the face of increasingly serious environmental challenges, the corporation changed various policies, one of which was related to human resources. Recruitment and selection, training, and compensation are all kinds of GHRM Practices. These principles are critical for businesses to practice when hiring individuals who can support both employee and corporate performance. Training is one of the stages done by employees in the company to acquire and improve performance skills.

Training is the process of acquiring specific knowledge and skills for them to be skilled and work in line with their obligations. One of the primary strategies through which human resource management creates environmental management support and efforts is through environmental training and development (Jabbour 2013). Green training is a technique for preserving the environment. This kind of training can be done online to raise staff awareness of environmental protection (Sinaga & Nawangsari 2019). Green training promotes employee awareness and sensitivity to the environment by educating employees about

energy-efficient work methods and allowing them to engage in environmental problem resolution (Nawangsari & Sutawidjaya 2018).

Some research has been conducted to investigate green human resource management, particularly green training. Satyawati & Satrya (2020) investigated green training as a means of improving organizational citizenship behavior through organizational culture development. According to the report, when businesses undertake green training, there must be moderation in green training activities, one of which is organizational culture. Furthermore, the social exchange hypothesis suggests that when employees obtain firm benefits, they must reciprocate (Fung *et al.* 2015). Some investigations also demonstrate that green training can lead to extra-role behaviors Pinzone (2019) by creating a supportive working environment through suitable interventions aimed at the successful execution of green goals. Arulrajah *et al.* (2015) performed research on the importance of green education and employee training in delivering the information and skills required for effective environmental performance. Employees can understand environmental management by receiving the necessary knowledge and training (Prasad 2013). The company's green training approach for employees will raise environmental awareness and competency, allowing employees to be better able to take necessary actions to reduce environmental impacts in the workplace (Khan *et al.* 2020). According to Jabbour (2015), the measurement of green training is related to the implementation of some environmental training for all employees; every employee has an equal opportunity to be trained on environmental issues; environmental training is used effectively by all employees; and evaluation of employee performance after the training environment. This study is expected to be a contribution, particularly in the subject of human resource management, by examining many studies done by other researchers, so that it can be expanded with new concepts in the future. Using bibliometric analysis, this study investigates human resource management techniques, particularly green training. This study is divided into four sections: the introduction, the method employed, findings and discussions, and the conclusion in the last part.

## 2 METHOD

This study uses a bibliometric approach. The research data collected is a Scopus publication accessed using Harzing's Publish or Perish with the topic of Green Training. Data collection was carried out in June 2022 by accessing the software using the Green Training keyword, from 2012–2022. The types of documents used are journal articles and conferences/proceedings. From the filtering of the data, 38 articles were found related to Green Training in the field of Human Resource Management. Furthermore, the results were analyzed using VOSViewer. This software can create and view bibliometric maps that visualize articles and other publications (Van Eck & Waltman 2010).

## 3 RESULTS AND DISCUSSION

This section discusses data on the development of the number of research on Green Training Human Resource Management from 2012 to 2022. The results show that research on green training has been carried out annually, but there has been no more significant increase. Based on a search through the Scopus database through publish or perish, there are obtained 38 articles related to green training. The development of the number of researchers studying green training is presented in Table 1.

Based on the data in Table 2, the top 10 articles were carried out by Teixeira (2016) with 165 citations. This study shows how to apply green training and link it with green supply chain management in companies in Brazil. In rank 2, research was also conducted by Teixeira (2012) by examining the relationship between green management and environmental training in

Table 1. Total publication development per year (2012–2022).

Year of Publication	Total
2022	2
2021	6
2020	10
2019	3
2018	2
2017	1
2016	2
2015	2
2014	3
2013	4
2012	3
Total	38

Table 2. Top 10 article.

No	Publication year	Author	Title	Journal	Cites
1	2016	A. Teixeira	Green training and green supply chain management: Evidence from Brazilian firms	Journal of Cleaner Production	165
2	2012	A.A. Teixeira	Relationship between green management and environmental training in companies located in Brazil: A theoretical framework and case studies	International Journal of Production Economics	153
3	2019	M. Pinzone	Effects of ‘green’ training on pro-environmental behaviors and job satisfaction: Evidence from the Italian healthcare sector	Journal of Cleaner Production	80
4	2018	A. Di Vaio	Management innovation for sustainability in seaports: Managerial accounting instruments and training for competitive green ports beyond the regulations	Sustainability (Switzerland)	64
5	2017	C. Aragão	Green training for sustainable procurement? Insights from the Brazilian public sector	Industrial and Commercial Training	55
6	2020	J. Liu	Uncovering the influence mechanism between top management support and green procurement: The effect of green training	Journal of Cleaner Production	43
7	2020	S. Cop	Perceived behavioral control as a mediator of green training commitment, and organizational citizenship behavior: A sustainable environmental practice	Business Strategy and the Environment	39
8	2018	N.T. Pham	Enhancing the organizational citizenship behavior for the environment: The roles of green training and organizational culture	Management and Marketing	32
9	2019	A.P. Srivastava	Examining the effect of employee green involvement on perception of corporate social responsibility: Moderating role of green training	Management of Environmental Quality: An International Journal	27
10	2020	G. Joshi	Green training in enhancing green creativity via green dynamic capabilities in the Indian handicraft sector: The moderating effect of resource commitment	Journal of Cleaner Production	20

companies with a total of 153 citations. In 2019, research on green training was conducted by Pinzone (2019) in the *Journal of Cleaner Production* with 80 citations, which researched how the effect of green training on pro-environmental behavior and job satisfaction. Furthermore, Table 2 shows that research on green training is more often published in the *Journal of Cleaner Production* with a reasonably high citation level. Further research on this topic can be a reference for publication in that journal.

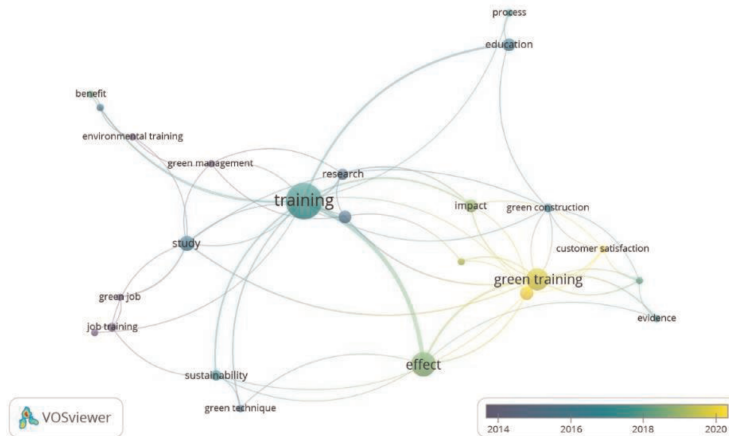


Figure 1. Overlay visualization publication of green training.

Figure 1 regarding the overlay visualization publication of green training shows a mapping of research related to training. Based on the picture, a study with the training aspect has been widely discussed and carried out over the last 10 years, and many were carried out in 2017, looking at the colors shown. However, related to green training research, the research trend has seen an increase since 2020 by linking several keyword trends such as customer satisfaction, green construction, etc.



Figure 2. Overlay visualization publication of green training.

Figure 2 shows an outline of the general nature of the bibliometric map by focusing on keywords. Visualization of keyword density map green training can be seen by connecting several other keywords to be continued in further research.

## 4 CONCLUSION

Based on the discussion results above, it can be concluded that several points are related to green training research. Research about training's topic has been carried out in the last decade, but the topic of green training is more often carried out in 2020. The citation presentation shows that the Journal of Cleaner Production is more often used for publications with the theme of green training with high citations so that it can be used as a reference for further research. The limitation of this research is that the data sources used still use publish or perish and do not include whole Scopus data due to limited access; therefore, further research can use data from other accesses such as the Scopus website ([www.scopus.com](http://www.scopus.com)) or Web of Science (WoS).

## REFERENCES

- Arulrajah, A. A., & Opatha, H. (2015). Green Human Resource Management Practices: A Review. *Sri Lankan Journal of Human Resource Management*. Retrieved from <https://journals.sjp.ac.lk/index.php/sljhrm/article/view/2130>
- Arulrajah, A. A., Opatha, H., & Nawaratne, N. (2015). Green Human Resource Management Practices: A Review. *Sri Lankan Journal of Human Resource Management* 5 (1): 1–16.
- Dessler, G. (2015). *Manajemen Sumber Daya Manusia (terjemahan)*. Jakarta: Salemba Empat.
- Fung, N. S., Ahmad, A., & Omar, Z. (2015). Work-Family Enrichment: Its Mediating Role in the Relationships Between Workplace Support Factors and Teachers' Job Satisfaction. *American Journal of Applied Sciences*, 12(4), 242–253. <https://doi.org/10.3844/ajassp.2015.242.253>
- Jabbour, C. (2013). Environmental Training in Organisations: From a Literature Review to a Framework for Future Rresearch. *Resources, Conservation and Recycling*, 74, 144–155. <https://doi.org/10.1016/j.resconrec.2012.12.017>
- Jabbour, C. J. C. (2015). Environmental Training and Environmental Management Maturity of Brazilian Companies with ISO14001: Empirical Evidence. *Journal of Cleaner Production*, 96, 331–338. <https://doi.org/10.1016/j.jclepro.2013.10.039>
- Khan, N. U., Bhatti, M. N., & Obaid, A. (2020). Do Green Human Resource Management Practices Contribute to Sustainable Performance in Manufacturing Industry? *International Journal of Environment and Sustainable Development*. <https://doi.org/10.1504/IJESD.2020.110647>
- Marhatta, S., & Adhikari, S. (2013). Green HRM and Sustainability. *International Journal of Ongoing Research in Management and IT*. Retrieved from %0Awww.asmgroun.edu.in/incon/publication/in%0Acon13-hr-006pdf
- Nawangsari, L. C., & Sutawidjaya, A. H. (2018). *The Impact of Human Resources Practices Affecting Organization Citizenship Behaviour with Mediating Job Satisfaction in University*. 200, 291–297. <https://doi.org/10.2991/aisteel-18.2018.64>
- Pinzone, M. (2019). Effects of 'Green' Training on Pro-environmental Behaviors and Job Satisfaction: Evidence from the Italian Healthcare Sector. *Journal of Cleaner Production*, 226, 221–232. <https://doi.org/10.1016/j.jclepro.2019.04.048>
- Prasad, R. S. (2013). Green HRM-partner in Sustainable Competitive Growth. *Journal of Management Science and Technology*, 1, 15–18.
- Rajnoha, R., & Lesníková, P. (2016). Strategic Performance Management System and Corporate Sustainability Concept – Specific Parametres in Slovak Enterprises. *Journal of Competitiveness*, 6(3), 107–124. <https://doi.org/10.7441/joc.2016.03.07>
- Satyawan, P. P. A., & Satrya, I. G. B. H. (2020). Peran Budaya Organisasi Memoderasi Pelatihan Hijau Terhadap Organizational Citizenship Behavior Pada Hotel Griya Santrian Sanur. *Ejmunud*, 9(9), 3321–3340. Retrieved from <http://www.tjybyb.ac.cn/CN/article/downloadArticleFile.do?attachType=PDF&id=9987>
- Sinaga, S. A., & Nawangsari, L. C. (2019). The Effect Of Green Recruitment, Green Training On Employee Performance In Pt Tru Using Organization Citizenship For Environment As Mediation Variable. *Dinasti International Journal of Management Science*, 1(2), 204–216. <https://doi.org/10.31933/DIJMS>
- Teixeira, A. (2016). Green Training and Green Supply Chain Management: Evidence from Brazilian firms. *Journal of Cleaner Production*, 116, 170–176. <https://doi.org/10.1016/j.jclepro.2015.12.061>
- Teixeira, A. A. (2012). Relationship Between Green Management and Environmental Training in Companies Located in Brazil: A Theoretical Framework and Case Studies. *International Journal of Production Economics*, 140(1), 318–329. <https://doi.org/10.1016/j.ijpe.2012.01.009>

# The performance measures of Islamic banking in Indonesia based on the Sharia Maqashid Index

Masiyah Kholmi, Adi Prasetyo\* & Tri Wahyu Oktavendi

*Faculty of Economics and Business, Universitas Muhammadiyah Malang, Malang, Indonesia*

**ABSTRACT:** This research aims to analyze the performance of a sharia bank based on the approach of Sharia Maqashid Index. This research is a quantitative descriptive that describes performance of *maqashid sharia* on general sharia banks in Indonesia, using three indicators: educating individuals, upholding justice, and maintaining the welfare. The samples considered in this research are 12 public sharia banks. The type of data used is the secondary data obtained from the annual reports that are published on their official website. Based on the data analysis, it shows that the *sharia maqasid* performance in Indonesia is generally still low on average. Based on the data analysis, a conclusion is drawn that the ratio of the performance Sharia Maqashid Index from 2017 to 2020 has not reached 50%. This is seen from the three *sharia maqashid* indicators of education, justice, and welfare. The highest rank of the Sharia Maqashid Index is Bank Panin Syariah (40.59%) and the lowest one is BTN Syariah with 20.74%. For further research, it does not only focus on the Maqashid Sharia Index but also uses several other variables, such as good governance of sharia business.

**Keywords:** Sharia Maqashid Index, Islamic banking, performance, sharia banking, sharia maqashid performance

## 1 INTRODUCTION

The development of sharia banking in Indonesia has witnessed improvements. This is shown by the fact that in 2018, the global sharia financial asset had reached USD 2.52 trillion, which is an increase of 3.5% from the previous year with USD 2.46 trillion. The State of Global Islamic Economy Report 2019/2020 stated that the sharia banking sector dominated the global sharia financial asset with 70%, *Sukuk* (sharia bonds) with 19%, Islamic Funds with 4%, and other sector with 7%. Meanwhile, by 2019, the sharia banking assets indicated growth, although it also experienced delay compared to the previous year. Based on the data of sharia banking financial performance in Indonesia during the nine months of 2019, the performance got weaker in ten Sharia General Banks (BUS) and the Sharia Business Unit (UUS) summarized by *Bisnis*. This is due to the condition of instability of global and domestic economy. The Head of Board of Commissioners of Deposit Insurance Agency (LPS), Hali Alamsyah, mentioned that the recent performance of sharia banking is still slow. The slow sharia banking performance always becomes a topic of discussion, especially the issue of proliferating the capital, liquidity, and efficiency (<https://www.antaranews.com>).

Indonesia is one of the countries that adopt the dual banking system, which are the conventional and sharia banking system. Both of the systems gained the legitimacy from the government to run their businesses. The sharia banking system is based on the principle of

---

\*Corresponding Author



profit sharing, wherein it is deemed beneficial for all, the individual and the bank. Moreover, this system prioritizes the aspect of fairness in transactions, ethics-based investment, the value of togetherness and fraternity in production, and avoiding any speculation in financial transactions (Mulyani 2019). Through the cooperation system of profit sharing, there will also be risk sharing (Nurhayati & Wasilah 2014: 72). The risk emerges from the financial activities that are not the responsibility of the capital grantee solely (business owners), but the capital grantor is also responsible for such risk (loss) fairly according to the agreement in the beginning.

Wahid *et al.* (2018) and Firmansyah (2018) explained that measuring the performance of sharia bank is different from measuring it for the conventional banks. The measurement for conventional bank only observes one side of the business that is the ability to make a profit. The evaluation on sharia banking recently tends to prioritize the profit-making ability, where, in some cases, sharia bank forgets their duty to fulfill their social functions (Mutia & Musfirah 2017). The evaluation on financial performance is measured using the ratio of Return on Equity (ROE), Return on Investment (ROI), Return on Asset (ROA), Capital Asset Management Earning, Liquidity, Sensitivity of Market Risk (CAMELS), and Economic Value Added (EVA). Meanwhile, the performance evaluation from the non-financial aspects and the intangible assets are commonly ignored. The financial performance only relies on the past performances, so that it is less capable to direct the company to the company target (Yuwana *et al.* 2012). In Islam (aspect of justice), the profit of the bank is not the primary indicator for the performance measurement, but other aspects like social aspects and the human resources also given more attention.

Sharia bank has the main goal to contribute to achieving *sharia maqashid*. *Sharia maqashid* is a sharia objective in terms of protecting the religion, soul, mind, descendants, and assets related to all cases or human business that is related directly to daily activities (Febriadi 2017; Muchlis & Sukirman 2016). The sharia goal discussed here is if one works in the banking world, of course, their daily activities and duties may not backlash with the Islamic sharia principles (*sharia maqashid* concept). Febriadi (2017) mentioned that *sharia maqashid* means the goal is to set sharia for the *welfare* of the people. This *welfare* is within the justice, blessing, happiness, and wisdom.

The inevitability of sharia bank performance is measured by the *sharia maqashid* in terms of redirecting the objectives of the existence of sharia bank. The performance of sharia bank is not only about profit returns but also about the aspects of environment, social, and the aspect of the goal of *maqashid* calculated for measuring the performance of a sharia bank. Mohammed & Razak (2008) in their research using the Sharia Maqashid Index formulated the measurement of the performance of sharia banking that is developed based on the principles of *sharia maqashid* with the purpose of measurement of performance of a sharia bank. Al-Syatibi mentions: sharia actually aims to create *welfare* for the humans in the world and for the afterlife (Kara 2012). *Sharia maqashid* becomes the main source in each operational development and the products existing in the sharia banks, such as the *mudhrabah* and *musyarakah* funding (Febriadi 2017).

The research about the performance of sharia bank by using the Sharia Maqashid Index has been conducted by several researchers. Mohammed & Razak (2008) explained that Sharia Maqashid Index could be used as a strategic alternative approach in the measurement of the performance of sharia banking that is universal and can be implemented in the form of strategy as well as policy that is comprehensive to achieve the goal of the sharia bank. The findings of Mohammed & Razak (2008) show that the variable of *sharia maqashid* indicated a better percentage in the measurement of sharia banking performance compared to the performance measurement of conventional banking. Wasyith (2017) by his findings shows that the revitalization of the concept of *maqashid* of Muhammad Abu Zahrah and Abdul Majid Najjar can be used to implement the concept of Sharia Maqashid Index that is developed based on three main factors, namely educating the individuals, upholding the justice, and creating *welfare* (Mohammed & Razak 2008).

Sharia Maqashid Index model, until recently, has been applied in the scientific study to measure the performance of sharia banking in many countries, including Indonesia. The measurement of performance of sharia banking through the aspect of *sharia maqashid* has been conducted by Antonio (2013), the findings show that the health level of the application of sharia principles in Indonesia is generally better than the sharia banks of Jordan. This finding is in line with the research of Mutia & Musfirah (2017) by using the Sharia Maqashid Index and the SAW method (Simple Additive Weighting). The performance of *sharia maqashid* of 25 sharia banks in Southeast Asia, consisting of the banks of Indonesia, Malaysia, Thailand, Brunei, and the Philippines, shows that Indonesia has the best performance with 46.22% followed by Malaysia with 43.15%, and the lowest is the Philippines with 1.12%.

Sudrajat & Sodiq (2016), based on their research results, provide the rating of sharia commercial bank as follows: 1) Bank Panin Syariah, 2) BCA Syariah, 3) Bank Muamalat, 4) Bukopin Syariah, 5) BRI Syariah, 6) BNI Syariah, 7) Bank Syariah Mandiri, 8) Maybank Syariah, 9) Bank Mega Syariah. The findings of Wahid *et al.* (2018) are supported by the findings of Firmansyah (2018) that Panin Bank Syariah has successfully used the operational cost to gain high income and also successfully achieved better performance of *sharia maqashid* compared to other banks in Indonesia.

Cakhyaneu (2018) indicates that the five banks that have the highest Sharia Maqashid Index are Bank Syariah Mandiri, Panin Bank Syariah, Bank Mega Syariah, BNI Syariah, and Bank Muamalat Indonesia. The findings of Sudrajat and Sodiq (2016), Wahid *et al.* (2018), and Firmansyah (2018) indicated that Panin Bank Syariah ranks first in terms of performance of the Sharia Maqashid Index. However, the study of Cakhyaneu (2018) indicated that the bank with the highest performance of *sharia maqashid* is the Bank Syariah Mandiri. Meanwhile, Rosyidah *et al.* (2018) indicated that the best ranking of the banks based on the Sharia Maqashid Index of 2014 to 2016 are Bank Muamalat Indonesia, Bank Syariah Mandiri, and BNI Syariah.

Mulyani (2019) revealed that during the *sharia maqashid* of the sharia banking during 2012–2016, the first objective for individual education achieved is less than 5%, which means that the *sharia maqashid* in terms of education is less optimal. The second objective of *sharia maqashid* is to uphold the justice, which has been achieved very well, which is the *mudharabah* and *musyarakah* funding with 67.14% and the interest-free income is on average of 99%. The third objective of *sharia maqashid* is to maintain the *welfare* that has the percentage of *zakat* and bank's profit ratio less than 5%, which means that the sharia banks have not optimally maintained their *welfare*. Based on the idea and the findings of the research, the researchers are impressed to use the Sharia Maqashid Index in measuring the performance of public sharia bank in Indonesia for the 2017–2020 period, where 2020 has become the year when COVID-19 pandemic was declared across the world, including Indonesia. The researchers hoped to see the achievement of the *sharia maqashid* on the sharia banks of Indonesia. In addition, the importance of this research is that there is no comparable and practicable Sharia Maqashid Index measurement model.

The theoretical contribution of this research is to the application of the theory of *sharia maqashid* as a measurement of the performance of sharia banking and the implication of the policy of this research. It is expected that this research may give information to the people or all parties about the degree of *sharia maqashid* of a sharia bank in Indonesia during 2017–2020 period.

### 1.1 *Sharia banking*

Islamic Commercial Banks are given the authority to provide payment traffic services, while Rural Banks do not have this authority. Rural Banks are not involved in several types of services for foreign exchange and demand deposit business activities. This regulation is also carried out for BPRS which is regulated in the Sharia Banking Law. This research focuses more on the sharia banks that are operating to provide services based on the traffic of



transaction concept. According to Article 3 of the Constitution No. 21 of 2008, sharia banking aims to support the conduct of national development in terms of improving the justice, togetherness, and equal distribution of welfare. Sharia banks are developed based on the principle that does not separate the worldly and religious urges.

The Board of Sharia Accounting Standard (DSAS) and IAI (Indonesian Association) have constructed five principles of sharia transaction, those are:

1. Principle of fraternity (*ukhuwah*), wherein a sharia transaction upholds the value of togetherness in gaining benefit (sharing economics), based on principles of: knowing each other (*ta'aruf*), understanding each other (*tafahum*), helping each other (*ta'awun*), ensuring each other (*takaful*), and synergizing each other (*tahaluf*).
2. Principle of justice, wherein the essential value is to give something only to those who have the right to it and according to the portion. The sharia banking operation must be based on the principles as follow: interest free (*riba'*), violation (*dzalim*) free, speculation free (*masyir*), unclarity free (*gharar*), conducting halal financing operation.
3. The principle of *welfare* is all types of kindness and benefits applied in the dimension of worldly and (afterlife) *ukhrawi*, material and spiritual, as well as individually and collectively. The materials that become the purpose of sharia terms (*sharia maqashid*) that is in the form of maintenance upon: *aqidah* (beliefs), faith and obedience (*dien*); cognitive (*'aql*); descendance (*nasl*); soul and welfare (*naf's*); and the assets (*mal*).
4. Principle of balance (*tawazun*), the main point is that the sharia transaction is not only focused on achieving benefits for the stakeholders But also the presence of balance in the business and social life.
5. The principle of the universalism (*syumuliyah*), wherein the point is that transaction can be done by all parties with urgencies without the separation of the religions, races, and groups of people.

## 1.2 The measurement of performance of sharia banking

According to Badreldin & Mohamed (2009), the performance measurement of the sharia bank recently tends to use the financial ratio adopted from the conventional bank performance measurement, such as calculating ROA, ROI, ROE, CAMELS, and EVA. All of those measurements are limited to the aspect of material and give the impression that sharia banking orientate on the profit instead of social purposes (Mohammad & Shahwan 2013). In line with the sharia purpose (*maqashid*), then the sharia entity, including sharia banking needs the measurement of performance that is specifically based on the *sharia maqashid*, according to the sharia banking, that the performance measurement of the sharia banking is more specific and is aimed to the purpose that is expected to be achieved based on the sharia principles and also measured from the sharia perspective (*sharia maqashid*), so that it can be discovered as to whether the performance of the sharia banking or the *muamalah* operation that is conducted according to the values and principles of sharia.

## 1.3 The performance of sharia maqashid

Linguistically, *sharia maqashid* consists of two words, *maqashid* and *sharia*. *Maqashid* means objective, meanwhile sharia is a way to the water spring or a path to source of life (Ghifari *et al.* 2015). *Sharia maqashid* through the framework of *welfare* attempts to push all kinds of kindness and avoids all kinds of damage. The sharia perspective upon assets impacted on how the *sharia maqashid* can be applied to determine the administration upon the assets (read: accounting) and the information delivery upon the basic and the position of assets: especially related to source and the use of the income (Birton 2015). Birton (2015) mentioned that the framework of *welfare* here is applied in the gaining, management, administration, and the accounting information delivery upon the source and the use of assets of an entity. Since the Islamic sharia really emphasized on

the right and obligation fulfillment of the party, directly and indirectly, including the assets, then the objective of the financial report also covers the fulfillment of right and obligation.

In the previous researches, it is explained that *sharia maqashid* according to Abu Zahrah is divided into three categories of *tahdzib al-fard* (individual education), *iqamah al-adl* (upholding justice), and *welfare* (welfare). This concept here is transformed into a measurement in evaluating the performance of the sharia banking. That is because the sharia banking system is very different from the conventional banking. The fundamental difference is related to the value reference (Islamic Worldview) of each of the financial institutions.

This fundamental difference will bring implications for the difference on the formulation and creation of the products of both banking model, including the performance evaluation model of each of models. Umar Chapra concluded that the difference between one economic to another system lies on the three main things: (1) Islamic Worldview; (2) Objective; (3) Strategy or policy (Chapra 2003).

Different worldview with the conventional one will bring implications to the formulation of the objective of sharia bank that is different. The formulation of different objective will also affect the process of strategy generating or even different evaluation models as well. These values are not only expressed in the form of *fiqh* legality of a certain product. However, more than that, it must also affect widely on the economic and social aspects as the consequences of the attempt in achieving *sharia maqashid* (Rosly *et al.* 2003). Mohammed & Razak (2008) in the research under the title of “Testing the Performance Measured Based on Maqasid al-Shariah (PMMS) Model on 24 Selected Islamic and Conventional Banks” formulated a performance evaluation for the sharia banking by referring to the concept of *sharia maqashid*. The variables used to refer the theory of *sharia maqashid* of Abu Zahrah that covers the *Tahdzib al-Fard* (educating the individuals), *Iqamah Al-Adl* (establishing justice), and *Welfare* (Welfare). Through the Sekaran Concept, the three *maqashids* are interpreted and are classified into several elements (Taufik & Nugraha 2012).

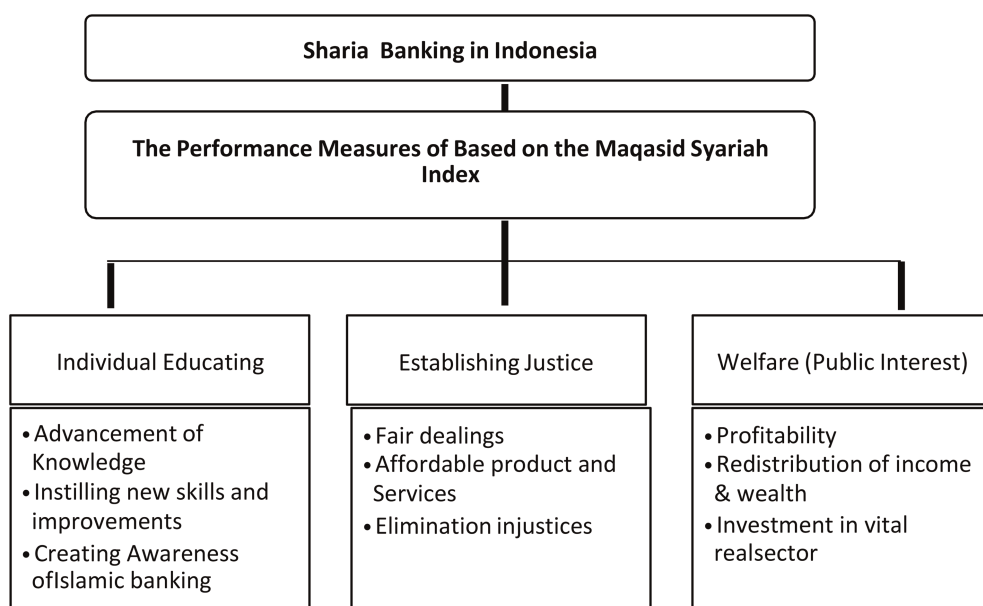


Figure 1. Sharia Maqashid Index.

The three *maqashids* can be transformed into nine dimensions and ten elements. The ten elements are then transformed into performance ratio. The first meaning of educating the individual in *maqashid* is the presence of the development of knowledge and skill on the

individual so that the values of spirituality increase. Sharia banking must design an educational program and training with the moral values so that it is able to increase the knowledge and skill of the staffs. The banking must also give information to the stakeholders that the products offered are according to the sharia. The ratio in the first *maqashid* here is the education grant, research, training, and publicity promotion (Mohammed & Razak 2008). The second *maqashid* is justice, the sharia banking must ensure the honesty and justice in every transaction and in the business activity that is covered in their products, pricing, and terms of contract. Moreover, every deal (*akad*) must be free of any elements of injustice, such as *maysir*, *gharar*, and *riba*. The ratio in the second *maqashid* is the ratio PER (Profit Equalization Reserve), the skim portion of the funding of *mudharabah* and *musyarakah* (functional distribution) as well as the ratio of interest free income. Meanwhile, the third *maqashid* is called *welfare*, which means that the banks must develop investment projects and social services to increase the welfare of the people. That can be seen from the ratio of *zakat* paid by the banks and the investment in real sector. The ratio of the third *maqashid* is the profit returns, personal income transfer (*zakat*), and investment ratios in real sector (Mohammed & Razak 2008).

Based on the supporting theory and the review of previous studies mentioned above, this research focuses on how the performance of sharia banks in Indonesia measured using the Sharia Maqashid Index is based on three objectives that are to be achieved, which are individual education, upholding justice, and creating *welfare* for the people, not only for selected parties but for all. The description can be seen in Figure 1.

## 2 RESEARCH METHOD

This research is a descriptive quantitative study that describes the *maqashid* performance of the public sharia banks in Indonesia. The sample-collecting technique in this research is purposive sampling with the sample criteria of public sharia banks, which are registered in Financial Services Authority (OJK) and publish the annual report consistently from 2017 to 2020. The sample gained in this research are 12 public sharia banks, Bank Muamalat Indonesia, Bank Syariah Mandiri, Bank Mega Syariah, Bank BRI Syariah, Bank Syariah Bukopin, Bank BNI Syariah, Bank Jabar Banten Syariah, BCA Syariah, Bank Victoria Syariah, Maybank Syariah Indonesia, BankPanin Syariah, and BTPN Syariah. In this research, a variable is analyzed, that is the performance measurement of the sharia banks using the Sharia Maqashid Index. The performance of *sharia maqashid* is divided into three parts (Mohammed & Razak 2008) those are educating individuals, establishing justice, and public interest (*welfare*). Meanwhile, the operationalization of the variables in this research is shown as follows:

Table 1. Variable operational definitions.

Variable	Dimensions	Elements	Performance Ratios
Educating Individual	D1. Advancement Of Knowledge	E1. Education grant	R1. Education grant / Total Expenses
		E2. Research	R2. Research Expense / Total Expenses
	D2. Instilling new skills and improvement	E3. Training	R3. Training Expense / Total Expenses
	D3. Creating Awareness of Islamic banking	E4. Publicity	R4. Promotion Expense / Total Expenses

(continued)

Table 1. Continued

Variable	Dimensions	Elements	Performance Ratios
Establishing Justice	D4. Fair dealings	E5. Fair returns	R5. Bagi hasil belum dibagi / Total Income
	D5. Affordable products and Services	E6. Affordable price	R6. Mudharabah and Musharakah / Total Pembiayaan
	D6. Elimination injustices	E7. Interest free product	R7. Interest free income/Total Income
Welfare (Public Interest)	D7. Profitability	E8. Profit ratios	R8. Net Profit / Total assets
	D8. Redistribution of income and wealth	E9. Personal income	R9. Zakah /Aset bersih
	D9. Investment in vital real sector	E10. Investment ratios in real sector	R10. Investasi sector total Riil/ investasi

Source: (Mohammed & Razak 2008)

Table 2. Average weights for the three objectives.

Objectives	Average Weight (100%)	Elements	Average Weight 100%
Education	30	E1. Education grant/donation	24
		E2. Research	27
		E3. Training	26
		E4. Publicity	23
		Total	100
Justice	41	E5. Fair returns	30
		E6. Fair price	32
		E7. Interest-free product	38
		Total	100
Welfare	29	E8. Bank's profit ratios	33
		E9. Personal income transfers	30
		E10. Investment ratios in real	37
		Sector Total	100
Total	100		

Source: (Mohammed & Razak 2008)

The data used are the secondary data in the form of annual reports of the sharia banks from 2017 to 2020 gained from the official website of each bank.

The analysis data technique used is the following:

1. Content analysis was done by identifying the *sharia maqashid* from the annual report of the Public Sharia Banks in Indonesia
2. Calculating the ratios of the *sharia maqashid* using the measurement developed by (Mohammed & Razak 2008). Meanwhile, the steps of the ratio analysis are as follows:
  - (a) Measuring the ratios of each element from the bank objective that is based on the *sharia maqashid*: education, justice, and welfare.
  - (b) Moving the result of the ratios measurement in regard to the weight of each elements (like presented on Table 2) and is added according to the classification of each element depending on their objectives. Then, the result will be multiplied by the weight of it according to the objective. After the result of the multiplication gained,

then the calculation of the Sharia Maqashid Index is conducted by multiplying all the performance indicators of sharia banking.

- (c) Conducting the sharia bank ranking determination by adding all the performance indicators from one variable with the three factors of the Sharia Maqashid Index.
3. Conclusion drawing. The conclusion of this research is in the form of determining the performance of the *sharia maqashid* as a general, the highest *sharia maqasihd*, and the lowest *sharia maqashid*.

### 3 RESULT AND DISCUSSION

The Sharia Maqashid Index uses the Islamic bank performance measurement model proposed by Mohammed & Razak (2008) under three objectives, namely: *education, Justice, and Welfare*. Each objective can be described as follows: a). *Education* has four elements, namely *Education Grant, Research, Training, and Publicity*; b). *Justice* is divided into three elements, namely *Fair Returns, Fair Price, and Interest-free Product*; c). *Welfare* is divided into three elements, namely *Bank's Profit Ratios, Personal Income Transfers, and Investment Ratios in real Sector*.

The following are the results of the calculation of the Islamic Commercial Banks' performance ratio:

#### 1. Educating individual

Table 3. Average value of maqashid shariah performance ratio individual education year 2017–2020.

Bank Name	Educational Assistance / Scholarship (R1)	Research Activities (R2)	Training Activities (R3)	Publication Activities (R4)
<b>Bank Muamalat</b>	0,0155	0,0050	0,0155	0,0441
<b>Bank Syariah Mandiri</b>	0,0152	0,0405	0,0152	0,0646
<b>Bank Syariah M</b>	0,0178	0,0000	0,0178	0,2025
<b>BRI S</b>	0,0063	0,0178	0,0063	0,0450
<b>BUKOPIN S</b>	0,0172	0,0305	0,0172	0,0371
<b>BNI S</b>	0,0228	0,0040	0,0228	0,1429
<b>JABAR S</b>	0,0279	0,0068	0,0387	0,0000
<b>BCA S</b>	0,0175	0,0000	0,0209	0,0181
<b>VICTORIA S</b>	0,0076	0,0934	0,0076	0,0228
<b>MAYBANK S</b>	0,0109	0,1983	0,0109	0,0159
<b>PANIN S</b>	0,0098	0,0367	0,0098	0,0568
<b>BTN S</b>	0,0201	0,0000	0,0201	0,0193

Source: Processed data 2021.

Based on the average value of the first *sharia maqashid*, the performance objective (educating individuals) is divided into four elements. The first element is education ( $E_1$ ), the ratio of *education grand* the bank with the highest value is bank Jabar Syariah with a ratio value of 0.0279 (2.79%). It shows that the total expenditure of 2.79% intended for education donations, meanwhile, the lowest value achieved by BRI Syariah, which is 0.0063 (0.63%).

The second element is research ( $E_2$ ), the highest achievement in research activities was Maybank Sharia at 0.1983 (19.83%), while the lowest achievement was Bank Mega Syariah, BCA Syariah, and BTN Syariah, which during 2017–2020 did not incur research costs (0%).

The third element is training ( $E_3$ ), the highest achievement in terms of training achieved by Bank Jabar Syariah at 0.0387 (3.87%) and the lowest achievement was BRI Syariah at 0.0063 (0.63%). Meanwhile, the fourth element is a publication ( $E_4$ ) with the highest ratio