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## The Role of Corporate Social and Environmental Responsibilities in Addressing Sustainable Development Goals: Evidence from Malaysian Manufacturing Firms

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#### ABSTRACT

Recently, sustainable development goals (SDGs) have been the requirement of every organization around the globe that requires researchers' and regulators' focus. Hence, the present study examines the impact of corporate social responsibilities (CSR) in addressing the SDGs of manufacturing companies in Malaysia. The current article also examines the mediating impact of organizational effectiveness among the linkage between CSR and SDGs achievement. The researchers have used the survey method and taken the questionnaires for data collection. The current article has also applied the smart-PLS to analyze the data collected from selected respondents. The results indicated that CSRs have a positive linkage with the SDG's achievement. The findings also exposed that organizational effectiveness significantly mediates the linkage of CSR and SDGs achievement in manufacturing companies of Malaysia. The article has guided the policymakers regarding developing the regulations related to the SDG's achievement through CSR and organizational effectiveness.

Keywords: Sustainable Development Goals, Corporate Social Responsibilities, Manufacturing Companies in Malaysia, Organizational Effectiveness JEL Classifications: Q56, Q01, R1

#### **1. INTRODUCTION**

The increase in the population and economic activities, especially as the result of wide and serious competition at the global level, have raised many social and environmental problems for the countries and put future development at risk. Although the business firms are taking some initiatives to overcome change the situation, all these activities are unsatisfactory and not enough to reduce the social and environmental problems and remove the barriers in the way to future development. For the sake of sustainable development, reformers and scholars are paying attention to social and environmental development (Baloch et al., 2021; Di Vaio et al., 2020; Huang et al., 2021b). With getting on social and environmental awareness among the people and countries, the government and authorities are formulating different policies, carrying on several programs, and launching campaigns to promote environmental and social well-being besides the financial development to catch highly sustainable development through the assurance of resources and social peace (Chien et al., 2021b; Huang et al., 2021a; Mio et al., 2020). In this line, several UIN states got together in General Assembly for declaring the agenda 2030 for sustainable development, the agenda which contained the 17 SDGs with 169 objectives and passed the resolution in favor of adopting these SDGs as the goals for global sustainable development. Before this resolution, the Millennium Development Goals (MDGs) were being followed,

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but the distinction between these ones and the 17 SDGs was that they were to address the global social and environmental issues bringing sustainable development and fit to all countries equally. Divided under the three categories of Social, environmental, and financial development, they have the essence of the planet, people, peace, prosperity, and partnership (Allen et al., 2018; Chien et al., 2021a; Ehsanullah et al., 2021; Hsu et al., 2021).

Most of the SDGs declared by UN-GA are based on the social and environmental wellbeing of the Country, and all the SDGs are interrelated. The SDGs achievement is neither possible only because of the government initiatives, nor it is a single firm activity, but it is the outcome of collective efforts of all the firms and corporations for the social welfare and environmental sustainability along with the financial development (Escrig-Olmedo et al., 2019; Huang et al., 2021c; Li et al., 2021a). Corporate social responsibility refers to the concept that firms must have a responsibility to do well. It conveys that corporations must self-regulate their activities and must be socially responsible, accountable, and fair to their customers, stakeholders, countrymen, and the world at large. When the firms feel their social responsibilities which imposed on them towards the people or entities associated with them for making good relations, they can attain the SDGs like partnerships, good health, peace, justice, decent work, and innovation (Chien et al., 2021b; Li et al., 2021b; ElAlfy et al., 2020). When business organizations have a responsibility towards the environment and feel accountable for environmental safety, they self-regulate their activities through effective strategies so that the negative impact of the resources and technologies they employ can be removed from the environment. They can address many of the SDGs like climate action, proper sanitation systems, provision of clean water, etc. (Chien et al., 2021c; Yang et al., 2022).

This study analyzes the role of corporate social and environmental responsibilities in accelerating business effectiveness and addressing SDGs in the Malaysian economy for manufacturing companies. Malaysia is a developing country with an upper-middle-income economy. It is the fourth-largest economy in the Asian region. But, it is the 38<sup>th</sup> largest economy across the world in terms of the nominal gross domestic product (GDP). The Country's estimated GDP for 2022 is \$415.375 billion (Lee et al., 2022). The main sectors of the economy are agriculture: 7.1%, industry: 36.8%, services: 56.2%. In Malaysia, the manufacturing activities include rubber and oil palm processing and manufacturing of electronics, smelting, logging and timber processing, photovoltaics, and automotive. The manufacturing sector contributes 26.11 % to Malaysia's GDP and provides employment opportunities to a large population (Ooi et al., 2018).

The Malaysian government has taken several initiatives for addressing SDGs by UN-GA in the manufacturing sector as well as other economic sectors. A multi-stakeholder, participatory governance system administered by the National SDG Council has been established. Several conferences, discussions, and group sessions in order to do planning for addressing SDGs are conducted for creating awareness and participation from stakeholders (Chien et al., 2021d; Liu et al., 2022 Moslehpour, 2021; Sadhukhan et al., 2018). Malaysia has struggled to conduct data readiness studies mapping practices in private, non-governmental, and civil society institutions to motivate them for addressing SDGs in the 11MP initiative. A National SDGs Roadmap has been formed for guidance to the implementation of the 2030 sustainable development agenda. The practices for SDGs have been incorporated in 11MP. The Country will proceed to implement the 2030 agenda through the 11MP model, with several ways for execution. The national level multi-stakeholder governance system will be replicated at the state level to address SDGs at the sub-national level. The government also pays attention to resources mobilizing, social administration, financing through stakeholders' collaboration, and CSR programs for addressing SDGs (Mohsin et al., 2021; Vaziri et al., 2019).

Though the government is paying attention to SDGs and taking initiatives at different levels for addressing them, still it needs much improvement. The present study is aimed at analyzing the corporate social and environmental responsibilities' role in addressing SDGs. Its aim is also to examine the mediating role of accelerating business effectiveness between corporate social and environmental responsibilities and addressing SDGs. First, the corporate social and environmental responsibilities fulfillment for addressing the SDGs have been a favorite topic of discussion among researchers since the goals have been passed. But, the role of corporate social and environmental responsibilities are the different elements and considered at different moments for addressing SDGs. The present study combines these two factors by dealing with them simultaneously as the predictors of corporate's efforts to address SDGs. Second, many authors have found that business effectiveness is somehow related to corporate social and environmental responsibilities in addressing SDGs, but business effectiveness has been used in few studies as a mediator between corporate social and environmental responsibilities and addressing SDGs. In contrast, this article takes business effectiveness as a mediator among these factors. Third, this study examines the manufacturing enterprises of Malaysia for checking the role of corporate social and environmental responsibilities, and business effectiveness, in addressing SDGs. This is one of the great literary contributions of the study.

The present study is structured as: the 2<sup>nd</sup> part throws light on the past studies' arguments about the nexus among corporate social and environmental responsibilities, business effectiveness, and addressing SDGs. The 3<sup>rd</sup> part tells about the procedures adopted in research for the collection of quantitative data and the analysis of the desired relations among the factors. The 4<sup>th</sup> part describes the findings of the relationship based on analyzed data, and these results through comparison are supported by the past studies. In last the study, implications, conclusions, and limitations are given.

#### **2. LITERATURE REVIEW**

A country not only need to achieve higher economic growth, but it is also a need to sustain this development (Chien et al., 2021f; Moslehpour et al., 2022a; Nawaz et al., 2021). The sustainability in the economic development of a country depends on the environment of the Country, the resources available, allocation of resources, healthy and prosperous countrymen, and social conditions. The 17 SDGs passed by UN-GA in agenda 2030 for

sustainable development require these characteristics, which are common to all countries (Betti et al., 2018; Chien et al., 2021g; Shair et al., 2021). The SDGs are in categories: social peace, prosperity, collaboration, environmental sustainability, and financial progress. The improvement in these areas helps the Country to address the SDGs. As sustainable development is not possible to achieve only by the government and it needs cooperation from all the individuals and corporations as well, the incorporation and execution of corporate social and environmental responsibilities are required to address SDGs (Chien et al., 2021e; Lu et al., 2021; Moselhpour, 2022b; Nawaz et al., 2021). The present study deals with the role of corporate social and environmental responsibilities in developing business effectiveness and addressing SDGs. The relationship of corporate social and environmental responsibilities and business effectiveness with addressing SDGs has a significant place in the literature. Many of the past studies are cited below for assuming the relation of corporate social and environmental responsibilities, business effectiveness, and addressing SDGs.

Corporate social responsibility means that business organizations must have social responsibilities to do well to others. The business organizations themselves must feel the social responsibilities and self-regulate their activities following the principles of being socially responsible, accountable, and fair to their customers, stakeholders, countrymen, and the world at large (Grover et al., 2019; Sun et al., 2020; Xueying et al., 2021; Zhao et al., 2021). While the business organizations have consciousness of the social responsibilities imposed on them towards the individuals and entities associated who are in contact for developing effective relations, they can address the SDGs like good health, partnerships, peace, justice, innovation, decent work, etc. (ElAlfy et al., 2020; Tan et al., 2021; Xiang et al., 2021). Schaltegger, Beckmann, and Hockerts (2018), in an article, examine the impact of social responsibilities, social innovation, and addressing SDGs. A theoretical research survey was conducted, and data for the study was collected from articles on social innovation published between 2003 and 2017. These articles were retrieved from the Web of Science and EBSCO database. The analysis of the articles reveals that when the firms have a sense of social responsibility, they keep an eye on the changing requirements of the stakeholders and adopt innovative techniques and technologies to adapt to these requirements. Social innovation, economic innovation, and improved infrastructure are the SDGs and give foundation to many other SDGs like industrial growth, economic growth, employment rise, and high living standards. A study done by Nurunnabi (2017) and Othman et al. (2020) investigates corporate social responsibility as a way to energy efficiency and firms' addressing SDGs. The study implies that some of the social responsibilities are to provide a clean environment to the public, an efficient work environment for employees, produce less costly products which the customers can afford, and the production of good quality products through the encouragement of energy efficiency. The fulfillment of these all responsibilities makes it easy for the organizations to address the SDGs related to environmental cleanliness, firms' efficiency, and customers' wellbeing. That is why it can be said:

H1: Corporate social responsibilities have a positive link with addressing SDGs.

Corporate environmental responsibility is the way through which business organizations incorporate environmental concerns into their policies and practices. The purpose is to reduce greenhouse gas emissions, chemicals, and wastes, increase the resources and processes efficiency, maximize the productivity of resources, and reduce the activities that can adversely affect the natural resources (Sadiq et al., 2021a; Sinkovics et al., 2020). AS the incorporation of environmental responsibilities is meant for using natural resources most efficiently and effectively for reducing the negative environmental impacts and occurrence of costs, it helps the organizations to address many SDGs like climate action, clean water and diet, proper sanitation, effective resources allocation, the health of living beings, and welfare improvement, etc. (Pizzi et al., 2020; Sadiq et al., 2021b; Sadiq et al., 2021c). Rosenthal, Quinn, Grieshop, Pillarisetti, and Glass (2018), analyze the environmental responsibilities' impacts on addressing the environmental SDGs. The use of clean technologies was taken as the measurement of environmental responsibilities. The data for analyzing the impacts of clean technology use and its contribution to environmental SDGs achievement was acquired from 40 middle and lowerincome countries. The results highlight that the countries where domestic and commercial entities have social responsibility consciousness, utilize clean and energy-efficient technologies which do not impart any harmful impact on the environment. Thus, the domestic and commercial entities address the environmental SDGs like good health and wellbeing, gender equality, affordable and clean energy, climate action, and-life on land. Sinha, Mishra, Sharif, and Yarovaya (2021), examine corporate environmental responsibility and its contribution to addressing SDGs. This study reveals that business corporations have many environmental responsibilities like the evaluation of the environment, monitoring the changes in the environment because of the business practices, following the environmental legislation, preventing environmental pollution, and applying ways to reduce environmental pollution. The discussion above proposes the following hypothesis:

H2: corporate environmental responsibilities have a positive link with addressing SDGs.

The research was managed by Mishra (2021), which examines the influences of social responsibilities on business effectiveness and SDGs achievement. The firms having consciousness of social responsibilities perform the environmental sustainability activities like waste management, recycling, water management, renewable energy, reusable materials, and reducing polluting resources use, for facilitating good environment for the public. These initiatives through the clean work environment improve the employees' performance and through the clean environment to the general public, gain their support in business effectiveness. And the business effectiveness in this way helps address environmental and business-related SDGs. In a research article Costa, Tafuro, Benvenuto, and Viola (2021), integrate the relationship between social responsibilities, business effectiveness, and SDGs achievement. Social accountability and responsibility motivate the firms to take initiatives for the enhancement of human capital through providing additional resources to local employees for capacity improvement, giving employees specific technical training and arranging for the learning of potential or expecting employees. Human capital improvement

**3. RESEARCH METHODS** 

enhances business effectiveness by improving management efficiency, influential leadership, effective communication, optimal productivity, and enhanced marketing. As businesses are considered the fundamental contributors to SDGs achievement, improved business effectiveness increases this contribution to addressing SDGs. So, organizational effectiveness mediates between corporate social responsibilities and addressing SDGs. Bello (2020), investigates the relationships among organizational effectiveness, corporate social responsibilities, and addressing SDGs. Socially conscious firms always try to fulfill their social responsibilities. When the firms carry out philanthropic activities like raising funds for local charities, arranging for volunteers, providing easy employment to local workers, facilitating local trade, and supporting the local economy, they have support from local people. The local public and government support assist the firm in getting high business effectiveness. The increased business effectiveness characterized by efficient employees' performance, decent work, innovation, and quality production, assures the SDG's achievement. Hence, we may assume:

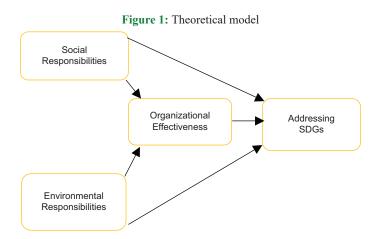
H3: Organizational effectiveness is a mediator between corporate social responsibilities and addressing SDGs.

In an article Abad-Segura and Gonzalez-Zamar (2021), wrote about the relationship between corporate environmental responsibilities, organizational effectiveness, and addressing SDGs. The study implies that when businesses obey environmental standards and take responsibility for their actions, the work environment for their employees is clean and healthy, and they can contribute to the company's success. Economic growth is fueled by strong business effectiveness, which is defined by efficient corporate operations and inventiveness. As a result, businesses can address and accomplish the SDGs. Parmentola, Petrillo, Tutore, and De Felice (2022), investigate the relationship between corporate environmental responsibilities, organizational effectiveness, and addressing SDGs. One of the major environmental responsibilities is to reduce the greenhouse gas emissions which may cause climate change. The firms' initiatives to minimize the use of unclean energy through energy-efficient technologies and effective business processes help control greenhouse gas emissions. The use of energy-efficient technology and effective techniques accelerate business practices improve productivity and financial development. So, the business effectiveness enhances the firms' capacity to address the SDGs which require business environmental and financial development. Through an empirical research survey, Fleacă, Fleacă, and Maiduc (2018) throw light on organizational effectiveness and address SDGs through corporate environmental responsibilities. In achieving high business effectiveness, resources, employees' performance, and processes applied to play a significant role. When the firms follow the environmental regulations, they maintain the quality of resources, take care of the health and performance of the employees, and improve the business processes, and thus, the business effectiveness leads the firms towards the Achievement of SDGs. Hence, we can say:

H4: Organizational effectiveness is a mediator between corporate environmental responsibilities and addressing SDGs.

The study examines the impact of CSR in addressing the SDGs of manufacturing companies in Malaysia. The current article also examines the mediating impact of organizational effectiveness among the linkage of CSR and SDGs achievement. The researchers have used the survey method and taken the questionnaires for data collection. The employees of manufacturing companies in Malaysia are the respondents of the study. The employees are selected based on purposive sampling. The researchers have selected only those employees who have connected with SDGs achievement and CSR-related activities. The surveys were sent to the selected employees through the mail and also through personal visits. A total of 545 surveys were sent, but only 290 were returned after one month representing about 53.21 percent response rate. The study's framework consists of two predictors, one mediating variable and one predictive variable. Figure 1 shows the theoretical framework given below:

The current article has also applied the smart-PLS to analyze the data collected from selected respondents. This tool is considered the best statistical tool for primary data because it operates effectively even in the case of large sample sizes and also even in the case of complex frameworks (Hair Jr et al., 2020). The current study has taken two predictors, such as environmental responsibilities (ER) and social responsibilities (SR), along with one mediating variable, such as organizational effectiveness (OE) and one predictive variable, such as SDGs achievement (SDGA). The current study has taken the questionnaire from the past studies such as environmental responsibilities (ER) has four items and taken from the study of Yue, Sheng, She, and Xu (2020). Table 1 shows the measurement related to the ER given below:



### Table 1: Measurements for Environmental Responsibilities

Items	Statements	Source
ER1	"My organization's actions impact the health of	(Yue et al.,
	the environment."	2020)
ER2	"I have the power to protect the environment."	
ER3	"I can learn how to improve the environment."	
ER4	"I will work to make my surrounding	
	environment a better place."	

In addition, the current study has also taken the questionnaire related to social responsibilities (SR) that also has four items from the study of Cha and Jo (2019). Table 2 shows the measurement related to the SR given below:

Moreover, the present article has taken the questionnaire related to organizational effectiveness (OE) that also has twenty items from the study of Ng (2018). Table 3 shows the measurement related to the OE given below:

Finally, the present article has taken the questionnaire related to the SDGs achievement (SDGA) that also has twenty items from the study of Zamora-Polo, Sánchez-Martín, Corrales-Serrano, and Espejo-Antúnez (2019). Table 4 shows the measurement related to the SDGA given below:

#### **Table 2: Measurements for Social Responsibilities**

Items	Statements	Source
SR1	"My organization encourages collaboration of	(Cha and
	business with the regional community and other	Jo, 2019)
	institutions."	
SR2	"My organization sponsors sports and cultural	
	events."	
SR3	"My organization encourages charity services	
	supporting regional communities."	
SR4	"My organization gives back to society."	

#### **Table 3: Measurement for Organizational Effectiveness**

Table	5. Measurement for Organizational Enective	11035
Items	Statements	Source
OE1	"Our mission helps us to monitor performance."	(Ng,
OE2	"Our mission helps us to make a better decision."	2018)
OE3	"I understand how my job helps achieve our	
	mission."	
OE4	"Our mission statement helps me to understand	
	how my organization sets priorities."	
OE5	"Strategy is an important element in our mission."	
OE6	"Our strategy is achievable."	
OE7	"My day-to-day duties help us to achieve our	
	mission."	
OE8	"My co-workers' day-to-day duties help us to	
	achieve our mission."	
OE9	"Our mission is the driving force for this	
	organization."	
OE10	"Our organization's actions are consistent with our	
	mission."	
OE11	"Our organization's actions are consistent with our	
	vision."	
OE12	"Our organization's actions are consistent with our	
	core values."	
OE13	"We consistently meet the foundation for	
	performance established in our mission	
	statement."	
OE14	"We consistently meet the criteria for performance	
	established in our vision statement."	
OE15	"We consistently meet the criteria for performance	
	established in our values statement."	
OE16	"We are effective at cost-saving."	
OE17	"We maintain low expenses."	
OE18	"We work well with other nonprofits."	
OE19	"We have sufficient funds to provide service	
	programs."	
OE20	"We can appropriately allocate our financial	
	resources across programs."	

#### **4. RESEARCH FINDINGS**

The present article findings show the content validity using factor loadings, and the thumb rule is that the values should be more than 0.40, and the results exposed the same that shows valid content validity. In addition, the present article findings also show the convergent validity using average variance extracted (AVE), and the thumb rule is that the values should be more than 0.50, and the results exposed the same that shows valid convergent validity. Finally, the present article findings show the reliability using Alpha and composite reliability (CR), and the thumb rule is that the values should be more than 0.70, and the results exposed the same that shows all of the same that shows significant reliability. Table 5 shows all of the above-mentioned findings.

In addition, the present article findings show the discriminant validity using Heterotrait Monotrait (HTMT) ratio and thumb rule is that the values should be lower than 0.90 and the results exposed the same that shows valid discriminant validity. Table 6 shows all of the above-mentioned findings given below:

Finally, the path analysis shows the association among constructs (Figure 2), and the results indicated that CSRs have a positive linkage with the SDG's achievement and accept H1 and H2 (Figure 3). In addition, the findings also exposed that organizational

Table 4: Measurement for Achieven	ment of SDGs
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Items	Statements	Source
ASDG1	"My organization takes part in poverty	(Zamora-Polo
	reduction."	et al., 2019)
ASDG2	"My organization plays a significant role	
	in hunger-reduction."	
ASDG3	"My organization is working for health	
ACDC4	care and wellness."	
ASDG4	"My company also provides quality	
	education to their employees and employees' family."	
ASDG5	"My firm always works for gender	
ASDOJ	equality."	
ASDG6	"I have access to clean water and	
1152 00	sewerage."	
ASDG7	"My firm has the accessible and	
	non-polluting energy."	
ASDG8	"My firm takes part in decent work and	
	economic growth."	
ASDG9	"My firm has the innovation and effective	
	infrastructure."	
ASDG10	"My firm always works for reducing	
ACDC11	inequalities."	
ASDG11	"My firm is creating sustainable cities and communities."	
ASDG12	"My firm has the ability of responsible	
ASD012	consumption and production."	
ASDG13	"My organization always considers the	
1102 010	weather care."	
ASDG14	"My firm always cares about underwater	
	life."	
ASDG15	"My firm always cares for life in	
	terrestrial ecosystems."	
ASDG16	"My firm takes part in peacebuilding,	
	justice, and corruption-free institutions."	
ASDG17	"My organization strives to build	
	alliances to achieve the above goals."	

Table 5: Convergent validity	Table	5:	Convergent	validity
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ASDG1       0.467       0.935       0.940       0.504         ASDG10       0.683	Items	Loadings	Alpha	CR	AVE
ASDG10       0.683       0.611       0.614         ASDG12       0.654       0.658       0.658         ASDG13       0.658       0.669       0.814       0.624         ASDG16       0.646       0.846       0.814       0.814         ASDG2       0.480       0.846       0.848       0.814         ASDG3       0.674       0.845       0.845       0.845         ASDG5       0.775       0.845       0.845       0.845         ASDG6       0.845       0.940       0.960       0.971       0.894         ER1       0.940       0.960       0.971       0.894         ER2       0.947       0.947       0.911       0.648         OE1       0.851       0.968       0.971       0.648         OE10       0.793       0.911       0.648       0.911       0.648         OE10       0.793       0.968       0.971       0.648         OE11       0.851       0.968       0.971       0.648         OE16       0.817       0.91       0.648       0.91       0.648         OE17       0.830       0.971       0.648       0.91       0.91       0.648 <td></td> <td></td> <td>-</td> <td></td> <td></td>			-		
ASDG12       0.654         ASDG13       0.658         ASDG14       0.624         ASDG15       0.669         ASDG16       0.646         ASDG2       0.480         ASDG3       0.674         ASDG4       0.848         ASDG5       0.775         ASDG6       0.848         ASDG7       0.845         ER1       0.940       0.960       0.971       0.894         ER2       0.947            ER3       0.948             OE1       0.851       0.968       0.971       0.648         OE10       0.793            OE14       0.978            OE15       0.832             OE14       0.798             OE15       0.824              OE16       0.817               OE19       0.788			01966	012.10	010 0 1
ASDG13       0.658         ASDG14       0.624         ASDG15       0.669         ASDG16       0.646         ASDG2       0.480         ASDG3       0.674         ASDG4       0.848         ASDG5       0.775         ASDG6       0.848         ASDG7       0.845         ER1       0.940       0.960       0.971       0.894         ER2       0.947       0.845       0.968       0.971       0.894         ER4       0.947       0.968       0.971       0.648         OE10       0.793       0.968       0.971       0.648         OE11       0.851       0.968       0.971       0.648         OE10       0.793       0.968       0.971       0.648         OE14       0.798					
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ASDG2       0.480         ASDG3       0.674         ASDG4       0.848         ASDG5       0.775         ASDG6       0.848         ASDG7       0.845         ASDG9       0.845         ER1       0.940       0.960       0.971       0.894         ER2       0.947       0.968       0.971       0.894         ER4       0.947       0.968       0.971       0.648         OE1       0.851       0.968       0.971       0.648         OE10       0.793       0.968       0.971       0.648         OE12       0.830       0.911       0.648         OE14       0.798       0.971       0.648         OE15       0.832       0.971       0.648         OE16       0.817       0.968       0.971       0.648         OE2       0.824       0.971       0.648       0.971       0.648         OE2       0.824       0.971       0.648       0.971       0.648         OE2       0.824       0.971       0.971       0.971       0.971       0.971       0.971       0.971       0.971       0.971       0.971       0.971					
ASDG3       0.674         ASDG4       0.848         ASDG5       0.775         ASDG6       0.848         ASDG7       0.845         ASDG8       0.772         ASDG9       0.845         ER1       0.940       0.960       0.971       0.894         ER2       0.947	ASDG17	0.715			
ASDG4       0.848         ASDG5       0.775         ASDG6       0.848         ASDG7       0.845         ASDG8       0.772         ASDG9       0.845         ER1       0.940       0.960       0.971       0.894         ER2       0.947	ASDG2	0.480			
ASDG5       0.775         ASDG6       0.848         ASDG7       0.845         ASDG8       0.772         ASDG9       0.845         ER1       0.940       0.960       0.971       0.894         ER2       0.947	ASDG3	0.674			
ASDG6       0.848         ASDG7       0.845         ASDG8       0.772         ASDG9       0.845         ER1       0.940       0.960       0.971       0.894         ER2       0.947	ASDG4	0.848			
ASDG7       0.845         ASDG8       0.772         ASDG9       0.845         ER1       0.940       0.960       0.971       0.894         ER2       0.947	ASDG5	0.775			
ASDG8       0.772         ASDG9       0.845         ER1       0.940       0.960       0.971       0.894         ER2       0.947	ASDG6	0.848			
$\begin{array}{llllllllllllllllllllllllllllllllllll$	ASDG7	0.845			
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ER2       0.947         ER3       0.948         ER4       0.947         OE1       0.851       0.968       0.971       0.648         OE10       0.793       0       0       0       0         OE12       0.830       0       0       0       0       0         OE14       0.798       0	ASDG9	0.845			
ER3       0.948         ER4       0.947         OE1       0.851       0.968       0.971       0.648         OE10       0.793       0	ER1	0.940	0.960	0.971	0.894
ER40.947OE10.8510.9680.9710.648OE100.7930E120.8300E140.798OE140.7980E150.8320E160.817OE170.8090E180.7140E190.788OE20.8240E200.7400E30.795OE40.8530E50.8410E660.827OE70.8330E80.8110E90.713SR10.8710.8140.8800.650SR20.638SR30.8730.873	ER2	0.947			
OE1       0.851       0.968       0.971       0.648         OE10       0.793       0 <td< td=""><td>ER3</td><td>0.948</td><td></td><td></td><td></td></td<>	ER3	0.948			
OE10       0.793         OE12       0.830         OE14       0.798         OE15       0.832         OE16       0.817         OE17       0.809         OE18       0.714         OE19       0.788         OE2       0.824         OE20       0.740         OE3       0.795         OE4       0.853         OE5       0.841         OE6       0.827         OE7       0.833         OE8       0.811         OE9       0.713         SR1       0.871       0.814       0.880       0.650         SR2       0.638       SR3       0.873	ER4	0.947			
OE12       0.830         OE14       0.798         OE15       0.832         OE16       0.817         OE17       0.809         OE18       0.714         OE19       0.788         OE2       0.824         OE20       0.740         OE3       0.795         OE4       0.853         OE5       0.841         OE6       0.827         OE7       0.833         OE8       0.811         OE9       0.713         SR1       0.871       0.814         SR2       0.638         SR3       0.873	OE1	0.851	0.968	0.971	0.648
OE14       0.798         OE15       0.832         OE16       0.817         OE17       0.809         OE18       0.714         OE19       0.788         OE2       0.824         OE20       0.740         OE3       0.795         OE4       0.853         OE5       0.841         OE6       0.827         OE7       0.833         OE8       0.811         OE9       0.713         SR1       0.871       0.814       0.880       0.650         SR2       0.638       SR3       0.873	OE10	0.793			
OE15       0.832         OE16       0.817         OE17       0.809         OE18       0.714         OE19       0.788         OE2       0.824         OE20       0.740         OE3       0.795         OE4       0.853         OE5       0.841         OE6       0.827         OE7       0.833         OE8       0.811         OE9       0.713         SR1       0.871       0.814         SR2       0.638         SR3       0.873	OE12	0.830			
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OE19       0.788         OE2       0.824         OE20       0.740         OE3       0.795         OE4       0.853         OE5       0.841         OE6       0.827         OE7       0.833         OE8       0.811         OE9       0.713         SR1       0.871       0.814       0.880       0.650         SR2       0.638         SR3       0.873		0.809			
OE2       0.824         OE20       0.740         OE3       0.795         OE4       0.853         OE5       0.841         OE6       0.827         OE7       0.833         OE8       0.811         OE9       0.713         SR1       0.871       0.814       0.880       0.650         SR2       0.638         SR3       0.873		0.714			
OE20       0.740         OE3       0.795         OE4       0.853         OE5       0.841         OE6       0.827         OE7       0.833         OE8       0.811         OE9       0.713         SR1       0.871       0.814       0.880       0.650         SR2       0.638         SR3       0.873					
OE3       0.795         OE4       0.853         OE5       0.841         OE6       0.827         OE7       0.833         OE8       0.811         OE9       0.713         SR1       0.871       0.814       0.880       0.650         SR2       0.638         SR3       0.873		0.824			
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OE9         0.713           SR1         0.871         0.814         0.880         0.650           SR2         0.638         0.873         0.873		0.833			
SR1         0.871         0.814         0.880         0.650           SR2         0.638					
SR2         0.638           SR3         0.873		0.713			
SR3 0.873			0.814	0.880	0.650
SR4 0.819					
S.C	SR4	0.819			

#### **Table 6: Discriminant Validity**

	ASDG	ER	OE	SR
ASDG				
ER	0.577			
OE	0.797	0.490		
SR	0.509	0.413	0.457	

effectiveness significantly mediates among the linkage of CSR and SDGs achievement in manufacturing companies of Malaysia and accept H3 and H4. Table 7 shows these linkages among constructs given below:

#### **5. DISCUSSIONS**

The results stated that corporate social responsibilities have a positive link with addressing SDGs. The study of Saz-Gil, Cosenza, Zardoya-Alegría, and Gil-Lacruz (2020)confirms these results in the sense that the companies having the social responsibilities formulate the policies to take of the health, emotional, and economic needs of the society. The fulfillment of the societal needs reduces the health issues found in the society, reduces the unemployment problems leading to reduction of poverty and hunger, and opens success opportunities. So, these corporations address the SDGs successfully. These results match with Fallah Shayan, Mohabbati-Kalejahi, Alavi, and Zahed (2022), which implies that the socially conscious profit and non-profit making organizations carry out different philanthropic activities and always take care of the peace and wellbeing of the public, which are the goals for sustainability development. The results stated that corporate environmental responsibilities have a positive link with addressing SDGs. The study of JOHAN (2021) and Liu et al. (2021) supports these results. The study implies that the corporations have many responsibilities towards the environment where they are operating the relevant businesses practices. These responsibilities are meant for the safety of the environment and its elements, including living and non-living things. The fulfillment of the environmental responsibilities helps achieve sustainability goals like it provides clean water, healthy and fertile soil, a clean atmosphere, assuring nutritious food, and keeping the living beings healthy. These results agree with Qin, Harrison, and Chen (2019), which shows that when the corporations properly manage the operations through energyefficient technologies and resources, they can control the greenhouse gas emissions, which damage the climate balance and causes health problems. The SDGs like reduction of pollution, climate resilience, and sound health assurance can be attained.

The results stated that organizational effectiveness is a mediator between corporate social responsibilities and addressing SDGs. These results also agree with Nair, Arvin, Pradhan, and Bahmani (2021), which posits that for meeting the corporate environmental responsibilities, innovative green initiatives are required. These initiatives improve business effectiveness, and the increased business effectiveness helps address SDGs. These results agree with Poddar, Narula, and Zutshi (2019), which states that the corporations having consciousness of societal responsibilities do not restrict the employment opportunities to some specific group of persons or one gender but give equal opportunity to the public to show their professional abilities. This enhances business effectiveness with specialization and more efficient labor. The business effectiveness through improved social performance helps corporations address SDGs. Nishitani, Nguyen, Trinh, Wu, and Kokubu (2021), confirm these results that in socially conscious corporations, the employees having different social facilities and improved living standards are helpful to achieve high business effectiveness which assists in addressing SDGs. The results stated that organizational effectiveness is a mediator between corporate environmental responsibilities and addressing SDGs. Lu et al. (2021) supports these results and says that when the firms follow the environmental regulations having felt their responsibility, the work environment for the employees is clean and healthy and they can work for the business effectiveness. The achieved high business effectiveness characterized by efficient business working and innovativeness leads to economic growth. Hence, corporations can address and achieve SDGs.

#### 5.1. Implications

Both theoretical and empirical implications are extracted from the present study. This study contributes to the economic sustainability literature as it is writing about the SDGs, the

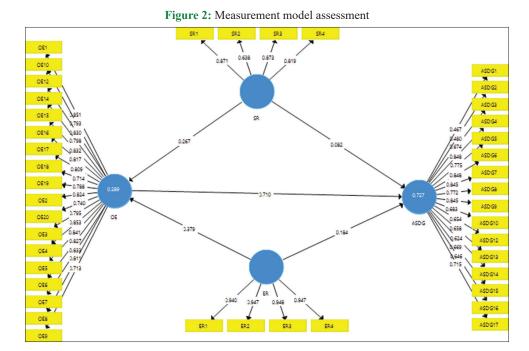
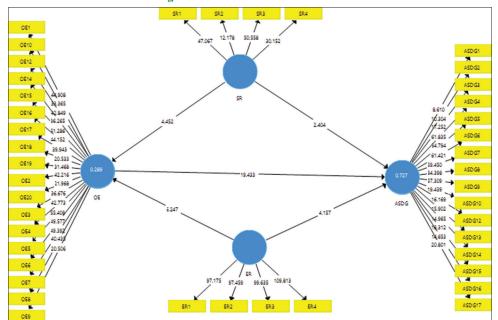


Figure 3: Structural model assessment



#### **Table 7: Path Analysis**

	v			
Relationships	Beta	S.D.	<b>T</b> Statistics	p values
ER→ASDG	0.184	0.044	4.157	0.000
ER→OE	0.379	0.061	6.247	0.000
OE→ASDG	0.710	0.037	19.433	0.000
SR→ASDG	0.082	0.034	2.404	0.009
SR→OE	0.267	0.060	4.452	0.000
SR→OE→ASDG	0.189	0.044	4.252	0.000
ER→OE→ASDG	0.269	0.041	6.551	0.000

universal set of goals for sustainable development by 2030. This study examines the role of corporate social and environmental responsibilities in addressing SDGs. The relation of corporate social and environmental responsibilities to addressing SDGs has been addressed individually. Simultaneous research of corporate social and environmental responsibilities for addressing SDGs adds to the literature. The examination of the corporate social and environmental responsibilities contribution of business effectiveness for addressing SDGs expands the scope of the literature. This study has great significance in all countries. It addresses a universal issue of development sustainability through SDGs. This study advises the governments who are interested in the Country's development and raising its position as a clean and prosperous country that they must establish state-owned authorities who look after the social and environmental practices in the corporations, as the social and environmental performance will contribute help address the SDGs. It also guides the organizations must incorporate the performance of social and environmental

responsibilities if they want to contribute to the SDGs and clears the path for their sustainable development.

#### 6. CONCLUSIONS AND LIMITATIONS

The study aim was linked to the assessment of the role of corporate social and environmental responsibilities in addressing SDGs, and the authors were also concerned to determine the role of business effectiveness in the relationship between corporate social and environmental responsibilities and addressing SDGs. Malaysian manufacturing enterprises provide the context for the analysis of the corporate social and environmental responsibilities, business effectiveness, and addressing SDGs and to find out the results of the relationships among corporate social and environmental responsibilities, business effectiveness and addressing SDGs. The results showed that there is a positive link between corporate social responsibilities with addressing SDGs. When the business firms consider their social responsibilities like learning and training to employees, ethical behavior, and health and wellbeing of the stakeholders, philanthropic activities for people, they address the SDGs regarding education, health, wellbeing, and work efficiency and other related goals. The results indicated that corporate environmental responsibilities have a positive relation to addressing SDGs. The undertaking of environmental responsibilities addresses a significant number of SDGs proposed in the 2015 UN General Assembly, which is based on environmental protection and climate actions. The study confirmed that the implementation of corporate social and environmental responsibilities enhances business effectiveness, which helps address SDGs.

Though, like many other studies, the present study has some limitations as well, these limitations can be a source of extension to literature if the authors pay attention. The study examines only two factors like corporate social and environmental responsibilities to address the global issue of SDGs. Though the social and environmental responsibilities are significant to address SDGs, the importance of financial development and management efficiency cannot be denied for SDGs. The scholars must take into consideration these factors despite the corporate social and environmental responsibilities for addressing SDGs. The present study examines corporate social and environmental responsibilities for addressing SDGs. SDGs achievement is a global aspect, so there needs evidence from multiple countries for analyzing the role of corporate social and environmental responsibilities in addressing SDGs. That's why the reliability of the factors and their relations is not clear and it is required to administer the survey to the randomly selected countries for collecting evidence about the corporate social and environmental responsibilities role in addressing SDGs.

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#### REFERENCES

Abad-Segura, E., Gonzalez-Zamar, M.D. (2021), Sustainable economic development in higher education institutions: A global analysis within

the SDGs framework. Journal of Cleaner Production, 294, 126133.

- Allen, C., Metternicht, G., Wiedmann, T. (2018), Initial progress in implementing the sustainable development goals (SDGs): A review of evidence from countries. Sustainability Science, 13(5), 1453-1467.
- Baloch, Z.A., Tan, Q., Kamran, H.W., Nawaz, M.A., Albashar, G., Hameed, J. (2022), A multi-perspective assessment approach of renewable energy production: Policy perspective analysis. Environment, Development and Sustainability, 24(2), 2164-2192.
- Bello, I. (2020), Sustainable development goals (SDGs) for education in Nigeria: An examination of Etisalat corporate social responsibility in Nigeria's post-basic education sector. International Journal of Lifelong Education, 39(5-6), 562-575.
- Betti, G., Consolandi, C., Eccles, R.G. (2018), The relationship between investor materiality and the sustainable development goals: A methodological framework. Sustainability, 10(7), 2248-2254.
- Cha, J.B., Jo, M.N. (2019), The effect of the corporate social responsibility of franchise coffee shops on corporate image and behavioral intention. Sustainability, 11(23), 1-16.
- Chien, F., Ananzeh, M., Mirza, F., Bakar, A., Vu, H.M., Ngo, T.Q. (2021a), The effects of green growth, environmental-related tax, and eco-innovation towards carbon neutrality target in the US economy. Journal of Environmental Management, 299, 113633.
- Chien, F., Hsu, C.C., Ozturk, I., Sharif, A., Sadiq, M. (2022), The role of renewable energy and urbanization towards greenhouse gas emission in top Asian countries: Evidence from advance panel estimations. Renewable Energy, 186, 207-216.
- Chien, F., Hsu, C.C., Zhang, Y., Vu, H.M., Nawaz, M.A. (2021b), Unlocking the role of energy poverty and its impacts on financial growth of household: Is there any economic concern. Environmental Science and Pollution Research, 29(9), 13431-13444.
- Chien, F., Kamran, H.W., Nawaz, M.A., Thach, N.N., Long, P.D., Baloch, Z.A. (2021c), Assessing the prioritization of barriers toward green innovation: Small and medium enterprises Nexus. Environment, Development and Sustainability, 24(2), 1897-1927.
- Chien, F., Pantamee, A.A., Hussain, M.S., Chupradit, S., Nawaz, M.A., Mohsin, M. (2021d), Nexus between financial innovation and bankruptcy: Evidence from information, communication and technology (ict) sector. The Singapore Economic Review, https:// doi.org/10.1142/S0217590821500181
- Chien, F., Sadiq, M., Kamran, H.W., Nawaz, M.A., Hussain, M.S., Raza, M. (2021e), Co-movement of energy prices and stock market return: Environmental wavelet nexus of COVID-19 pandemic from the USA, Europe, and China. Environmental Science and Pollution Research, 28(25), 32359-32373.
- Chien, F., Sadiq, M., Nawaz, M.A., Hussain, M.S., Tran, T.D., Le Thanh, T. (2021f), A step toward reducing air pollution in top Asian economies: The role of green energy, eco-innovation, and environmental taxes. Journal of Environmental Management, 297, 113420.
- Chien, F., Zhang, Y., Sadiq, M., Hsu, C.C. (2021g), Financing for energy efficiency solutions to mitigate opportunity cost of coal consumption: An empirical analysis of Chinese industries. Environmental Science and Pollution Research, 29(2), 2448-2465.
- Costa, A., Tafuro, A., Benvenuto, M., Viola, C. (2021), Corporate social responsibility through SDGs: Preliminary results from a pilot study in Italian universities. Administrative Sciences, 11(4), 117-134.
- Di Vaio, A., Palladino, R., Hassan, R., Escobar, O. (2020), Artificial intelligence and business models in the sustainable development goals perspective: A systematic literature review. Journal of Business Research, 121, 283-314.
- Ehsanullah, S., Tran, Q.H., Sadiq, M., Bashir, S., Mohsin, M., Iram, R. (2021), How energy insecurity leads to energy poverty? Do environmental consideration and climate change concerns matters. Environmental Science and Pollution Research, 28(39), 55041-55052.

- ElAlfy, A., Darwish, K.M., Weber, O. (2020), Corporations and sustainable development goals communication on social media: Corporate social responsibility or just another buzzword? Sustainable Development, 28(5), 1418-1430.
- ElAlfy, A., Palaschuk, N., El-Bassiouny, D., Wilson, J., Weber, O. (2020), Scoping the evolution of corporate social responsibility (CSR) research in the sustainable development goals (SDGs) era. Sustainability, 12(14), 5544-5562.
- Escrig-Olmedo, E., Fernández-Izquierdo, M.Á., Ferrero-Ferrero, I., Rivera-Lirio, J.M., Muñoz-Torres, M.J. (2019), Rating the raters: Evaluating how ESG rating agencies integrate sustainability principles. Sustainability, 11(3), 915-938.
- Fallah Shayan, N., Mohabbati-Kalejahi, N., Alavi, S., Zahed, M.A. (2022), Sustainable development goals (SDGs) as a framework for corporate social responsibility (CSR). Sustainability, 14(3), 1222-1237.
- Fleacă, E., Fleacă, B., Maiduc, S. (2018), Aligning strategy with sustainable development goals (SDGs): Process scoping diagram for entrepreneurial higher education institutions (HEIs). Sustainability, 10(4), 1032-1047.
- Grover, P., Kar, A.K., Ilavarasan, P.V. (2019), Impact of corporate social responsibility on reputation-insights from tweets on sustainable development goals by CEOs. International Journal of Information Management, 48, 39-52.
- Hair, J.F. Jr., Howard, M.C., Nitzl, C. (2020), Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. Journal of Business Research, 109, 101-110.
- Hsu, C.C., Quang-Thanh, N., Chien, F., Li, L., Mohsin, M. (2021), Evaluating green innovation and performance of financial development: Mediating concerns of environmental regulation. Environmental Science and Pollution Research, 28(40), 57386-57397.
- Huang, S.Z., Chien, F., Sadiq, M. (2021c), A gateway towards a sustainable environment in emerging countries: The nexus between green energy and human Capital. Economic Research-Ekonomska Istraživanja, https://doi.org/10.1080/1331677X.2021.2012218
- Huang, S.Z., Sadiq, M., Chien, F. (2021a), The impact of natural resource rent, financial development, and urbanization on carbon emission. Environmental Science and Pollution Research, https:// doi.org/10.1007/s11356-021-16818-7
- Huang, S.Z., Sadiq, M., Chien, F. (2021b), Dynamic nexus between transportation, urbanization, economic growth and environmental pollution in ASEAN countries: Does environmental regulations matter? Environmental Science and Pollution Research, https://doi. org/10.1007/s11356-021-17533-z
- Johan, S. (2021), Determinants of corporate social responsibility provision. The Journal of Asian Finance, Economics, and Business, 8(1), 891-899.
- Lee, K., Azmi, N., Hanaysha, J., Alzoubi, H., Alshurideh, M. (2022), The effect of the digital supply chain on organizational performance: An empirical study in Malaysia manufacturing industry. Uncertain Supply Chain Management, 10(2), 495-510.
- Li, W., Chien, F., Hsu, C.C., Zhang, Y., Nawaz, M.A., Iqbal, S., Mohsin, M. (2021a), Nexus between energy poverty and energy efficiency: Estimating the long-run dynamics. Resources Policy, https://doi.org/10.1016/j.resourpol.2021.102063
- Li, W., Chien, F., Kamran, H.W., Aldeehani, T.M., Sadiq, M., Nguyen, V.C., Taghizadeh-Hesary, F. (2021b), The nexus between COVID-19 fear and stock market volatility. Economic Research-Ekonomska Istraživanja, https://doi.org/10.1080/1331677X.2021.1914125
- Liu, Z., Lan, J., Chien, F., Sadiq, M., Nawaz, M.A. (2022), Role of tourism development in environmental degradation: A step towards emission reduction. Journal of Environmental Management, https:// doi.org/10.1016/j.jenvman.2021.114078
- Liu, Z., Tang, Y.M., Chau, K.Y., Chien, F., Iqbal, W., Sadiq, M. (2021), Incorporating strategic petroleum reserve and welfare losses: A way

forward for the policy development of crude oil resources in South Asia, https://doi.org/10.1016/j.resourpol.2021.102309

- Lu, J., Liang, M., Zhang, C., Rong, D., Guan, H., Mazeikaite, K., Streimikis, J. (2021), Assessment of corporate social responsibility by addressing sustainable development goals. Corporate Social Responsibility and Environmental Management, 28(2), 686-703.
- Mio, C., Panfilo, S., Blundo, B. (2020), Sustainable development goals and the strategic role of business: A systematic literature review. Business Strategy and the Environment, 29(8), 3220-3245.
- Mishra, L. (2021), Corporate social responsibility and sustainable development goals: A study of Indian companies. Journal of Public Affairs, 21(1), 2147-2161.
- Mohsin, M., Kamran, H.W., Nawaz, M.A., Hussain, M.S., Dahri, A.S. (2021), Assessing the impact of transition from nonrenewable to renewable energy consumption on economic growth-environmental nexus from developing Asian economies. Journal of Environmental Management, 284, 111999.
- Moslehpour, M., Al-Fadly, A., Ehsanullah, S., Chong, K.W., Xuyen, N.T.M., Tan, L.P. (2022b), Assessing financial risk spillover and panic impact of Covid-19 on European and Vietnam stock market. Environmental Science and Pollution Research, 29, 28226-28240.
- Moslehpour, M., Chang, M.L., Pham, V.K., Dadvari, A. (2022a), Adopting the configurational approach to the analysis of job satisfaction in Mongolia. European Research on Management and Business Economics, 28(1), 100179.
- Moslehpour, M., Ismail, T., Purba, B., Wong, W.K. (2021), What makes GO-JEK go in Indonesia? The influences of social media marketing activities on purchase intention. Journal of Theoretical and Applied Electronic Commerce Research, 17(1), 89-103.
- Nair, M., Arvin, M.B., Pradhan, R.P., Bahmani, S. (2021), Is higher economic growth possible through better institutional quality and a lower carbon footprint? Evidence from developing countries. Renewable Energy, 167, 132-145.
- Nawaz, M.A., Hussain, M.S., Kamran, H.W., Ehsanullah, S., Maheen, R., Shair, F. (2021), Trilemma association of energy consumption, carbon emission, and economic growth of BRICS and OECD regions: Quantile regression estimation. Environmental Science and Pollution Research, 28(13), 16014-16028.
- Nawaz, M.A., Seshadri, U., Kumar, P., Aqdas, R., Patwary, A.K., Riaz, M. (2021), Nexus between green finance and climate change mitigation in N-11 and BRICS countries: Empirical estimation through difference in differences (DID) approach. Environmental Science and Pollution Research, 28(6), 6504-6519.
- Ng, C.W. (2018), The Effect of Leadership Styles, Social Capital, and Entrepreneurial Orientation on Organizational Effectiveness of Social Welfare Organizations in Malaysia. Malaysia: Universiti Utara Malaysia.
- Nishitani, K., Nguyen, T.B.H., Trinh, T.Q., Wu, Q., Kokubu, K. (2021), Are corporate environmental activities to meet sustainable development goals (SDGs) simply greenwashing? An empirical study of environmental management control systems in Vietnamese companies from the stakeholder management perspective. Journal of Environmental Management, 296, 113364.
- Nurunnabi, M. (2017), IFRS and Saudi accounting standards: A critical investigation. International Journal of Disclosure and Governance, 14(3), 191-206.
- Ooi, K.B., Lee, V.H., Tan, G.W.H., Hew, T.S., Hew, J.J. (2018), Cloud computing in manufacturing: The next industrial revolution in Malaysia? Expert Systems with Applications, 93, 376-394.
- Othman, Z., Nordin, M.F.F., Sadiq, M. (2020), GST fraud prevention to ensure business sustainability: A Malaysian case study. Journal of Asian Business and Economic Studies, 27(3), 245-265.

Parmentola, A., Petrillo, A., Tutore, I., De Felice, F. (2022), Is blockchain

able to enhance environmental sustainability? A systematic review and research agenda from the perspective of Sustainable Development Goals (SDGs). Business Strategy and the Environment, 31(1), 194-217.

- Pizzi, S., Caputo, A., Corvino, A., Venturelli, A. (2020), Management research and the UN sustainable development goals (SDGs): A bibliometric investigation and systematic review. Journal of Cleaner Production, 276, 124033.
- Poddar, A., Narula, S.A., Zutshi, A. (2019), A study of corporate social responsibility practices of the top Bombay stock exchange 500 companies in india and their alignment with the sustainable development goals. Corporate Social Responsibility and Environmental Management, 26(6), 1184-1205.
- Qin, Y., Harrison, J., Chen, L. (2019), A framework for the practice of corporate environmental responsibility in China. Journal of Cleaner Production, 235, 426-452.
- Rosenthal, J., Quinn, A., Grieshop, A.P., Pillarisetti, A., Glass, R.I. (2018), Clean cooking and the SDGs: Integrated analytical approaches to guide energy interventions for health and environment goals. Energy for Sustainable Development, 42, 152-159.
- Sadhukhan, J., Martinez-Hernandez, E., Murphy, R.J., Ng, D.K., Hassim, M.H., Ng, K.S., Andiappan, V. (2018), Role of bioenergy, biorefinery and bioeconomy in sustainable development: Strategic pathways for Malaysia. Renewable and Sustainable Energy Reviews, 81, 1966-1987.
- Sadiq, M., Alajlani, S., Hussain, M.S., Ahmad, R., Bashir, F., Chupradit, S. (2021c), Impact of credit, liquidity, and systematic risk on financial structure: Comparative investigation from sustainable production. Environmental Science and Pollution Research, 29(14), 20963-20975.
- Sadiq, M., Hsu, C.C., Zhang, Y., Chien, F.S. (2021a), COVID-19 fear and volatility index movements: Empirical insights from ASEAN stock markets. Environmental Science and Pollution Research, 28(47), 67167-67184.
- Sadiq, M., Nonthapot, S., Mohamad, S., Keong, O.C., Ehsanullah, S., Iqbal, N. (2021b), Does green finance matters for sustainable entrepreneurship and environmental corporate social responsibility during Covid-19? China Finance Review International, 12, 317-333.
- Saz-Gil, M.I., Cosenza, J.P., Zardoya-Alegría, A., Gil-Lacruz, A.I. (2020), Exploring corporate social responsibility under the background of sustainable development goals: A proposal to corporate volunteering. Sustainability, 12(12), 4811-4826.
- Schaltegger, S., Beckmann, M., Hockerts, K. (2018), Collaborative entrepreneurship for sustainability. Creating solutions in light of the UN sustainable development goals. International Journal of Entrepreneurial Venturing, 10(2), 131-152.
- Shair, F., Shaorong, S., Kamran, H.W., Hussain, M.S., Nawaz, M.A. (2021), Assessing the efficiency and total factor productivity growth of the banking industry: Do environmental concerns matters? Environmental Science and Pollution Research, 28(16), 20822-20838.

- Sinha, A., Mishra, S., Sharif, A., Yarovaya, L. (2021), Does green financing help to improve environmental and social responsibility? Designing SDG framework through advanced quantile modelling. Journal of Environmental Management, 292, 112751.
- Sinkovics, N., Sinkovics, R.R., Archie-Acheampong, J. (2020), The business responsibility matrix: A diagnostic tool to aid the design of better interventions for achieving the SDGs. Multinational Business Review, 29(1), 1-20.
- Sun, H., Awan, R.U., Nawaz, M.A., Mohsin, M., Rasheed, A.K., Iqbal, N. (2020), Assessing the socio-economic viability of solar commercialization and electrification in South Asian countries. Environment, Development and Sustainability, 23(7), 9875-9897.
- Tan, L.P., Sadiq, M., Aldeehani, T.M., Ehsanullah, S., Mutira, P., Vu, H.M. (2021), How COVID-19 induced panic on stock price and green finance markets: Global economic recovery nexus from volatility dynamics. Environmental Science and Pollution Research, 29(18), 26322-26335.
- Vaziri, M., Acheampong, M., Downs, J., Rafee Majid, M. (2019), Poverty as a function of space: Understanding the spatial configuration of poverty in Malaysia for sustainable development goal number one. GeoJournal, 84(5), 1317-1336.
- Xiang, H., Ch, P., Nawaz, M.A., Chupradit, S., Fatima, A., Sadiq, M. (2021), Integration and economic viability of fueling the future with green hydrogen: An integration of its determinants from renewable economics. International Journal of Hydrogen Energy, 46(77), 38145-38162.
- Xueying, W., Sadiq, M., Chien, F., Ngo, T.Q., Nguyen, A.T. (2021), Testing role of green financing on climate change mitigation: Evidences from G7 and E7 countries. Environmental Science and Pollution Research, 28(47), 66736-66750.
- Yang, Q., Du, Q., Razzaq, A., Shang, Y. (2022), How volatility in green financing, clean energy, and green economic practices derive sustainable performance through ESG indicators? A sectoral study of G7 countries. Resources Policy, 75, 102526.
- Yue, B., Sheng, G., She, S., Xu, J. (2020), Impact of consumer environmental responsibility on green consumption behavior in China: The role of environmental concern and price sensitivity. Sustainability, 12(5), 1-16.
- Zamora-Polo, F., Sánchez-Martín, J., Corrales-Serrano, M., Espejo-Antúnez, L. (2019), What do university students know about sustainable development goals? A realistic approach to the reception of this UN program amongst the youth population. Sustainability, 11(13), 1-19.
- Zhao, L., Zhang, Y., Sadiq, M., Hieu, V.M., Ngo, T.Q. (2021), Testing green fiscal policies for green investment, innovation and green productivity amid the COVID-19 era. Economic Change and Restructuring, https://doi.org/10.1007/s10644-021-09367-z
- Zhuang, Y., Yang, S., Chupradit, S., Nawaz, M.A., Xiong, R., Koksal, C. (2021), A nexus between macroeconomic dynamics and trade openness: Moderating role of institutional quality. Business Process Management Journal, 27(6), 1703-1719.