

The Impact of Corporate Social Responsibility on Environmental Performance: Evidence from less developed countries

Murad Baqis Hasan ¹, A.M.Q. Alaqel ² & M. A. Alhamidi ³

¹ Department of Financial Administration School of Management, Central University of Punjab, Bathinda, India.

² Department of Law, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India.

³ Department of Commerce, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India.

Received: 02.09.2023 • Accepted: 06.10.2023 • Published: 12.10.2023 • Final Version: 12.10.2023

Abstract: This paper aims to study the relationship between corporate social responsibility and environmental performance in Yemeni small and medium industrial enterprises. Based on a research framework, a self-questionnaire was used to collect data from a sample of 220 owners/managers of small and medium enterprises. The empirical results reveal that there is a significant positive relationship between four dimensions of corporate social responsibility (suppliers, environment, human resource management, and society) and the environmental performance of Yemeni SMEs, in contrast, there is one dimension of corporate social responsibility (investors), and its results showed no relationship with environmental performance.

Keywords: Corporate social responsibility; Environmental performance; Less developed countries; Yemen.

1. Introduction

Several decades ago, professionals in the industrial sector, policymakers focused on environmental issues, scholars, and business professionals exhibited a lack of concern towards the environment due to their belief that the production of commodities within their respective organizations had no impact on the natural surroundings. The issue of environmental decline or deterioration has emerged as a global concern. In contemporary times, a consensus has emerged among industrial practitioners, environmental policymakers, businessmen, and scholars on the factors contributing to environmental degradation, including climate change, air emissions, escalating water and air pollution, depletion of resources, and the utilization of hazardous chemicals (Al-Swidi et al., 2022, 2023). According to Ma et al. (2020), the year 2018 is widely recognized as the warmest year on record due to the aforementioned environmental concerns. Organizations face significant demand from stakeholders to reduce the environmental impact resulting from their manufacturing activities (Yu et al., 2017). In light of the numerous documented environmental concerns, it is imperative for companies to prioritize their

efforts towards environmental preservation and conservation initiatives. The focus on environmental concerns has been a significant driving force for professionals and researchers in the industrial sector over the past few decades (Al-Hakimi et al., 2022a; Melay et al., 2017; Vallaster et al., 2019). From an academic perspective, scholars are increasingly shifting their focus from broad discussions to specific concepts such as green human resource management (HRM) practices (Singh et al., 2020), competition in green supply chains (Wu and Kung, 2020), green bonds (Tolliver et al., 2020), and green innovation (Singh et al., 2020; Zhang et al., 2020). The global business landscape has witnessed tremendous transformations in response to the intensifying competitive milieu. In addition to the pursuit of profitability and competitive advantage, it is imperative to assume responsibility for the environmental consequences. Therefore, the present study focuses on the predictors that assess environmental performance. The environmental impact of manufacturing enterprises is significant, as the manufacturing industry plays a substantial role in contributing to many environmental concerns such as climate change, waste generation, depletion of natural resources, water pollution, and air pollution. According to the findings of Zailani et al. (2012), manufacturing enterprises are responsible for generating pollution and waste that pose a significant threat to the sustainability of life on our planet. Therefore, the promotion of environmental performance is a crucial requirement for effectively addressing global concerns.

Furthermore, there has been an increased recognition of the importance of corporate social responsibility (CSR), necessitating firms to adopt a novel approach that intentionally integrates environmental, social, and economic dimensions into their activities and plans (Hernández et al., 2020). Corporate Social Responsibility (CSR) has garnered significant scholarly interest and is widely recognized as a crucial phenomenon (Xu et al., 2018). According to research by the Social Investment Forum in 2014, a total of over 8000 companies across more than 160 countries allocated an investment of over four trillion dollars towards corporate social responsibility (CSR) programs. According to Hou (2019), organizations possess the legitimate prerogative to engage in marketing activities aimed at promoting their products to consumers. However, it is imperative to acknowledge that firms also bear ethical responsibilities in this regard. According to Hickie (2017), there is a substantial body of literature indicating that corporate social responsibility (CSR) practices have gained widespread acceptance on a global scale. Furthermore, the scope of CSR is observed to be expanding continuously. The philosophy of corporate social responsibility (CSR) holds significant influence and relevance for contemporary corporations, primarily driven by the increased focus on environmental concerns (Arrive et al., 2019). Historically, organizations have placed emphasis on financial gain; however, contemporary trends indicate a change towards prioritizing environmental concerns (Kraus et al., 2018).

Over the course of several decades, scholars have conducted extensive investigations into the relationship between financial performance and corporate social responsibility (CSR) (Ali et al., 2020). However, there has been a notable lack of focus on exploring the role of CSR in the context of environmental performance (Kraus et al., 2017). Furthermore, some studies have discovered that

corporate social responsibility (CSR) has a substantial impact on the overall performance of organizations (Javed et al., 2020; Long et al., 2020). However, it has been argued that corporate social responsibility (CSR) has not exerted a substantial impact on the performance of organizations (Smith et al., 2007). Despite the existence of multiple studies that have examined the impact of corporate social responsibility (CSR) on a firm's performance, academics continue to prioritize investigating this relationship due to the lack of clear findings. The existing body of literature suggests that the relationship between corporate social responsibility (CSR) and environmental performance lacks a definitive conclusion (Galbreath and Shum, 2012).

This paper examines the impact of corporate social responsibility (CSR) practices on the environmental performance of small and medium enterprises (SMEs). The sample consists of 220 owners/managers of SMEs who responded to a survey questionnaire. The Smart PLS program was used to analyze the data and test the hypotheses. The results indicate a significant positive relationship between the dimensions of CSR and environmental performance. The paper is structured as follows reviews the relevant literature on CSR, research methodology and data collection; and the findings, discusses their implications, and offers conclusions.

2. Theoretical background

CSR is an evolving and expanding notion that defies a single or consistent conceptualization. As such, different interpretations and understandings of CSR exist among scholars and practitioners (Cherian & Pech, 2017). CSR refers to the deliberate actions undertaken by the company to provide advantages and contribute to the well-being of the community in which it conducts its business operations. "The notion of CSR encompasses the engagement of a company with many stakeholders, including but not limited to the community, environment, employees, customers, suppliers, investors, and other relevant parties. Organizations can achieve a harmonious alignment of their economic, social, and environmental objectives through the implementation of CSR initiatives (Hopkins, 2005; Dahlsrud, 2006)." The primary objective of all businesses is to optimize their performance and financial gains. However, it is imperative for organizations to also take into account the ecological consequences of their operations. It is important for individuals to acknowledge that their actions have a direct adverse effect on the environment. This is mostly attributed to the utilization of resources, soil, and energy, which contribute to pollution through the emission of toxic gases and the release of contaminants into soil, water, and air throughout the production process (Ienciu & Napoca, 2009).

The formation of diverse environmental protection initiatives can be attributed to a multitude of circumstances, involving the participation of individuals, groups, and organizations. These factors encompass the augmentation of company dynamics, market and competitive forces, customer and consumer expectations, technological advancements, and the growing environmental consciousness among diverse stakeholders. As a result, certain corporations have been obligated to take on accountability and engage in these programs (Berber et al., 2019). A corporation that is socially

responsible not only prioritizes economic objectives but also takes into account environmental considerations. Hence, it is imperative for managers of such organizations to proficiently evaluate and oversee the environmental performance of the company. The environmental performance of an organization is indicative of its commitment and preparedness to undertake environmental responsibilities (Judge & Douglas, 1998). According to Marić, Berber et al. (2021), the notion of CSR has experienced alterations and revisions over time. As a result, numerous firms are now faced with demands for more comprehensive adjustments in their approach to societal and environmental matters (p. 2).

3. Hypothesis Development

CSR is a concept that encompasses the ethical and environmental aspects of business practices. It refers to the duty of a firm to adopt strategies, decisions, and actions that create value for society at large (Bowen & Johnson, 1953). CSR has become a global phenomenon in the past few decades, attracting the attention of researchers and practitioners alike (Xiang et al., 2020). However, CSR lacks a clear and consistent definition, which poses challenges for empirical research (Orlitzky et al., 2011).

One of the drivers of CSR is the increasing demand for eco-friendly products and services from customers. Eco-entrepreneurs are those who leverage this opportunity to address environmental issues in various industries and introduce green innovations to the market (Melay and Kraus, 2012). Moreover, firms face pressure from various stakeholders, such as competitors, customers, employees, and governments, to disclose and improve their social and environmental performance (Pekovic and Vogt, 2020).

In this study, we adopt a three-dimensional approach to CSR, which includes economic, social, and environmental dimensions (Alvarado, 2008). Previous studies have examined the impact of CSR on organizational performance and found positive effects (Long et al., 2020; Orazalin, 2020). However, most of these studies focused on the economic dimension of CSR, while neglecting the environmental dimension. Therefore, we aim to fill this gap by hypothesizing that:

H1. Suppliers-CSR is positively associated with environmental performance.

H2. Environment-CSR is positively associated with environmental performance.

H3. HRM-CSR positively associated with environmental performance.

H4. Community-CSR positively associated with environmental performance.

H5. Investors-CSR positively associated with environmental performance.

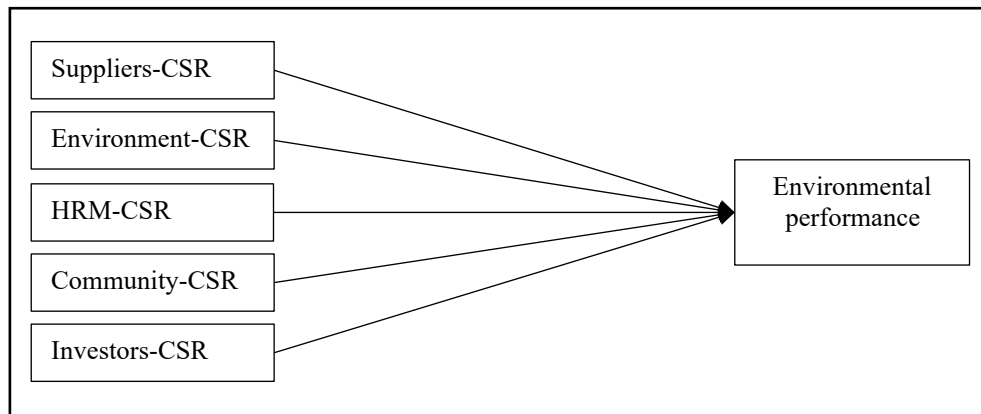


Figure 1. Research model

4. Methods

4.1. Research population and sample

The main aim of this study is to investigate the small and medium enterprises (SMEs) that are engaged in the manufacturing industry in Sana'a, Yemen. Based on the research by YMIT (2014), the total number of these enterprises was documented as 1058. Given the absence of up-to-date or authoritative demographic data, this study relied on the YMIT report as the primary source for sampling. Consistent with the recommendation put forth by Roscoe (1975) regarding the appropriateness of a sample size ranging from 30 to 500 for various research inquiries, this study utilized the table devised by Krejcie and Morgan (1970) to determine a sample size of approximately 285 small and medium-sized enterprises (SMEs) chosen through random sampling. The researchers employed a self-administered questionnaire as a means of gathering the necessary data from the management of small and medium-sized enterprises (SMEs). The managers included in this study were chosen as the sampling unit based on their extensive knowledge and expertise of many aspects of their respective organizations. Out of the total sample size of 285 questionnaires that were issued, 220 questionnaires were returned and were suitable for analysis. This finding suggests that there was a response rate of 77%. This is a good percentage compared to the ones reported in earlier research (e.g., Al-Hakimi et al., 2022b).

4.2. Measures

The objective of this study was to investigate the relationships between different constructs by employing a survey as the primary means of data acquisition. The survey participants' replies were measured using a five-point Likert scale, which spanned from 1 (indicating strong disagreement) to 5 (indicating strong agreement). The independent variable, CSR, was operationalized through the utilization of its five components, namely Suppliers, Environment, HRM, Community, and Investors. The survey instrument was constructed using the findings from the literature study conducted by Rettab et al. (2009) and Xu and Peng (2018).

5. Results and discussion

Before testing the study hypotheses, the internal consistency of the questionnaire was assessed by the researchers by the computation of Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) for each component in the model, as depicted in Table 1. The study showed Cronbach's Alpha values ranging from 0.784 to 0.974, which is above the recommended threshold of 0.7 as proposed by Hair et al. (2017). Composite Reliability, a metric used to assess the internal consistency of the items within each construct, met the minimum threshold of 0.7 (Hair et al., 2017), with values ranging from 0.923 to 0.979. The Average Variation Extracted (AVE) is a metric used to assess the extent to which a latent variable account for variation in comparison to other variables (Matić, 2014, p. 219). The present study observed a range of AVE values, which varied from 0.766 to 0.896. These values the acceptable threshold of 0.5, as suggested by Hair et al. (2017, p. 118). The results suggest that all constructs satisfied the requirements for both Composite Reliability and convergent validity.

Table 1. The Reliability and construct reliability and validity

Construct	Cronbach's Alpha	Composite Reliability	AVE
Suppliers	0.879	0.923	0.766
Environment	0.945	0.955	0.896
HRM	0.784	0.934	0.823
Community	0.974	0.943	0.788
Investors	0.923	0.924	0.894
Env. Perf	0.933	0.979	0.867

The results of Discriminatory Validity, as measured by the Heterotrait-Monotrait ratio of correlations (HTMT) (Ab Hamid et al., 2017), are presented in Table 2. The Hierarchical Trait Model Test (HTMT) is a quantitative test used to assess the extent to which the components of a construct are distinct and represent separate underlying constructs. According to Hair et al. (2019), an HTMT result below 0.9 is considered appropriate. As evidenced by the data presented in Table 2, all values fall below the threshold of 0.9, so suggesting a significant level of dissimilarity across the components. Based on the available data, it can be inferred that the Discriminatory Validity requirement is satisfied when employing the Heterotrait-Monotrait Ratio of correlations (HTMT) method.

Table 2. Discriminant Validity: (HTMT)

Construct	(1)	(2)	(3)	(4)	(5)	(6)
(1) Suppliers						
(2) Environment	0.655					
(3) HRM	0.498	0.454				
(4) Community	0.855	0.787	0.676			
(5) Investors	0.565	0.645	0.487	0.765		
(6) Env. Perf.	0.665	0.443	0.589	0.664	0.675	

The primary aim of this research is to examine the correlation between corporate social responsibility and environmental performance among SMEs operating in Yemen. Based on the results displayed in Table 3, a substantial positive correlation is observed between four dimensions of corporate social responsibility (namely, Suppliers, Environment, HRM, and Community) and the environmental performance of SMEs in Yemen. The findings of this study are consistent with the research carried out by Reverte et al. (2016), which demonstrated that the adoption of corporate social responsibility has a beneficial impact on an organization's environmental performance. The aforementioned conclusion was derived from an empirical investigation encompassing a representative sample of 133 business organizations in Spain. In a similar manner, scholarly investigations done in China have shown evidence that the implementation of CSR initiatives has positive outcomes for society, employees, and the environment. The aforementioned dimensions have been found to be positively influenced by CSR, as demonstrated by research conducted by Xu and Peng (2018), Grubor et al. (2020), and Anser et al. (2020). Suganthi (2020) provided support for the conclusions drawn in their study, which revealed that the adoption of CSR initiatives had significant positive effects on market outcomes, cost management, and environmental performance.

Table 3. Mean, Standard Deviation, T-statistics, P-values

H	Path	Original Sample	Mean	St. Deviation	T statistics	p values	Result
H1	Suppliers-CSR → EP	0.703	0.693	0.077	5.273	0.000	accepted
H2	Environment-CSR → EP	0.523	0.467	0.067	6.656	0.000	accepted
H3	HRM-CSR → EP	0.686	0.783	0.098	7.753	0.000	accepted
H4	Community-CSR → EP	0.661	0.894	0.088	6.898	0.000	accepted
H5	Investors-CSR → EP	0.02	0.565	0.045	1.276	0.07	Rejected

Note: EP= environmental performance

On the contrary, the research revealed that the aspect of social responsibility related to investors did not demonstrate any statistically significant association with environmental performance.

Consequently, the fifth hypothesis was deemed invalid. This discovery aligns with the research outcomes of Hart (1995). The results highlight the absence of a clear cause-and-effect connection between corporate social responsibility and environmental performance. Nevertheless, it is imperative for managers and owners to not disregard the importance of corporate social responsibility, given that previous research has demonstrated its substantial impact in determining company performance.

6. Conclusion

The present study explores a novel framework that enhances the comprehension of the link between social responsibility and the environmental performance of SMEs in developing countries. Several firms have invested heavily in environmental protection, which has resulted in rapid popularity, as environmental awareness among consumers is growing. Consequently, CSR emerged as a global concept, particularly in prominent companies.

Similar to previous academic investigations, this particular study possesses certain limitations that warrant more exploration in future research endeavours. This study examined the relationship between corporate social responsibility and environmental performance in small and medium industrial firms in Yemen. Therefore, it is recommended that future studies investigate additional intervening and moderating variables that could potentially influence this association. Furthermore, the present study was carried out within the framework of small and medium firms. Hence, it is recommended that future research endeavours broaden their focus to encompass both large-scale firms and even micro-level organizations. Furthermore, this study relied on data that was gathered from the Republic of Yemen. Hence, it is recommended that future research endeavours duplicate the aforementioned study in diverse geographical locations in order to establish the generalizability of the findings. In addition, it is worth noting that the present investigation primarily concentrated on doing a direct examination of the relationship between corporate social responsibility and environmental performance. However, it is recommended that forthcoming research endeavours delve into the potential influence of mediating or moderating variables on this relationship, as such exploration may lead to more refined and accurate findings.

Reference:

- 1) Ab Hamid, M. R., Sami, W., & Sidek, M. M. (2017). Discriminant validity assessment: use of Fornell & Larcker criterion versus HTMT criterion. *Journal of Physics: Conference Series*, 890 (1), 012163. <https://doi:10.1088/1742-6596/890/1/012163>
- 2) Al-Hakimi, M. A., Al-Swidi, A. K., Gelaidan, H. M., & Mohammed, A. (2022a). The influence of green manufacturing practices on the corporate sustainable performance of SMEs under the effect of green organizational culture: A moderated mediation analysis. *Journal of Cleaner Production*, 376, 134346.

- 3) Al-Hakimi, M. A., Borade, D. B., & Saleh, M. H. (2022b). The mediating role of innovation between entrepreneurial orientation and supply chain resilience. *Asia-Pacific Journal of Business Administration*, 14(4), 592-616.
- 4) Ali, H.Y., Danish, R.Q., Asrar-ul-Haq, M., (2020). How corporate social responsibility boosts firm financial performance: the mediating role of corporate image and customer satisfaction. *Corp. Soc. Responsib. Environ. Manag.* 27 (1), 166–177.
- 5) Al-Swidi, A. K., Al-Hakimi, M. A., Gelaidan, H. M., & Al-Temimi, S. K. A. (2022). How does consumer pressure affect green innovation of manufacturing SMEs in the presence of green human resource management and green values? A moderated mediation analysis. *Business Ethics, the Environment & Responsibility*, 31(4), 1157-1173.
- 6) Al-Swidi, A. K., Hair, J. F., & Al-Hakimi, M. A. (2023). Sustainable development-oriented regulatory and competitive pressures to shift toward a circular economy: The role of environmental orientation and Industry 4.0 technologies. *Business Strategy and the Environment*, 1-16.
- 7) Alvarado Herrera, A., (2008). Corporate Social Responsibility Perceived from a Sustainability Perspective, and its Influence on the Reputation of the Company and on the Behavior of the Tourist. University of Valencia.
- 8) Anser, M. K., Yousaf, Z., Majid, A., & Yasir, M. (2020). Does corporate social responsibility commitment and participation predict environmental and social performance?. *Corporate Social Responsibility and Environmental Management*, 27(6), 2578-2587. <https://doi.org/10.1002/csr.1977>
- 9) Arrive, T.J., Feng, M., Yan, Y., Chege, S.M., (2019). The involvement of telecommunication industry in the road to corporate sustainability and corporate social responsibility commitment. *Corp. Soc. Responsib. Environ. Manag.* 26 (1), 152–158.
- 10) Berber, N., Slavić, A., Aleksić, M., (2019). The relationship between corporate social responsibility and corporate governance. *Ekonomika*, 65(3), 1-12. <https://doi.org/10.5937/ekonomika1903001B>.
- 11) Bowen, H. R., & Johnson, F. E. (1953). *Social responsibility of the businessman*. Harper: New York.
- 12) Cherian, J., & Pech, R. (2017). The impact of corporate social responsibility on the workforce of selected business firms in the United Arab Emirates: a nascent economy. *Sustainability*, 9(11), 2-3. <https://doi.org/10.3390/su9112077>.
- 13) Dahlsrud, A. (2006). How corporate social responsibility is defined: an analysis of 37 definitions. *Corporate Social Responsibility and Environmental Management*, 15, 1– 13.
- 14) Galbreath, J., Shum, P., (2012). Do customer satisfaction and reputation mediate the CSR–FP link? Evidence from Australia. *Aust. J. Manag.* 37 (2), 211–229.
- 15) Grubor, A., Berber, N., Aleksić, M., & Bjekić, R. (2020). The influence of corporate social responsibility on organizational performance: a research in AP Vojvodina. *Anali Ekonomskog fakulteta u Subotici*, (43), 3-13. <https://doi.org/10.5937/AnEkSub2001003G>.
- 16) Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European business review*, 31(1), 2-24. <https://doi.org/10.1108/EBR-11-2018-0203>.
- 17) Hair, J., Hunt, T., Ringle, C. & Sarstedt M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*. (Second Edition) Los Angeles: Sage.

- 18) Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy of Management review*. 20 (4), 986–1014.
- 19) Hernández, J.P.S.-I., Yañez-Araque, B., Moreno-García, J., (2020). Moderating effect of firm size on the influence of corporate social responsibility in the economic performance of micro-, small- and medium-sized enterprises. *Technol. Forecast Soc. Change* 151, 119774.
- 20) Hickie, G., (2017). Extending the boundaries: an assessment of the integration of extended producer responsibility within corporate social responsibility. *Bus. Strategy Environ.* 26 (1), 112–124.
- 21) Hopkins, M. (2005). Measurement of corporate social responsibility. *International Journal of Management and Decision Making*, 6(3-4), 213-231. <https://doi.org/10.1504/IJMDM.2005.006549>.
- 22) Hou, T.C.T., (2019). The relationship between corporate social responsibility and sustainable financial performance: firm-level evidence from Taiwan. *Corp. Soc. Responsib. Environ. Manag.* 26 (1), 19–28.
- 23) Ienciu, I. A., & Napoca, C. N. (2009). Environmental performance versus economic performance. *International Journal of Business Research*, 9(5), 125- 131.
- 24) Javed, M., Rashid, M.A., Hussain, G., Ali, H.Y., (2020). The effects of corporate social responsibility on corporate reputation and firm financial performance: moderating role of responsible leadership. *Corp. Soc. Responsib. Environ. Manag.* 27 (3), 1395–1409.
- 25) Judge, W. Q., & Douglas, T. J. (1998). Performance implications of incorporating natural environmental issues into the strategic planning process: An empirical assessment. *Journal of Management Studies*, 35(2), 241-262. <https://doi.org/10.1111/1467-6486.00092>.
- 26) Kraus, S., Burtcher, J., Roig-Tierno, N., Syrjä, P., (2017). Configurational paths to social performance in SMEs: The interplay of innovation, sustainability, resources and achievement motivation. *Sustainability* 9 (10), 18–28.
- 27) Kraus, S., Burtcher, J., Vallaster, C., Angerer, M., (2018). Sustainable entrepreneurship orientation: a reflection on status-quo research on factors facilitating responsible managerial practices. *Sustainability* 10 (2), 444.
- 28) Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 301, 607–610. <https://doi.org/10.1177/001316447003000308>.
- 29) Long, W., Li, S., Wu, H., Song, X., (2020). Corporate social responsibility and financial performance: the roles of government intervention and market competition. *Corp. Soc. Responsib. Environ. Manag.* 27 (2), 525–541.
- 30) Long, W., Li, S., Wu, H., Song, X., (2020). Corporate social responsibility and financial performance: the roles of government intervention and market competition. *Corp. Soc. Responsib. Environ. Manag.* 27 (2), 525–541.
- 31) Ma, X., Jiang, P., Jiang, Q., (2020). Research and application of association rule algorithm and an optimized grey model in carbon emissions forecasting. *Technol. Forecast. Soc. Change* 158, 120159.
- 32) Málovics, G., Csigéné, N.N., Kraus, S., (2008). The role of corporate social responsibility in strong sustainability. *J. Socio Econ.* 37 (3), 907–918.

- 33) Marić, S., Berber, N., Slavić, A., & Aleksić, M. (2021). The mediating role of employee commitment in the relationship between corporate social responsibility and firm performance in Serbia. *SAGE Open*, 11(3), 1-17. <https://doi.org/10.1177%2F21582440211037668>.
- 34) Matić, D. (2014). Uticaj organizacione klime i liderstva na prenošenje znanja između zaposlenih u organizaciji (Nepublikovana doktorska disertacija). Fakultet tehničkih nauka, Novi Sad.
- 35) Melay, I., Kraus, S., (2012). Green entrepreneurship: definitions of related concepts. *Int. J. Strateg. Manag.* 12 (1), 1–12.
- 36) Melay, I., O'Dwyer, M., Kraus, S., Gast, J., (2017). Green entrepreneurship in SMEs: a configuration approach. *International Journal of Entrepreneurial Venturing*, 9 (1), 1–17.
- 37) Orazalin, N., (2020). Do board sustainability committees contribute to corporate environmental and social performance? The mediating role of corporate social responsibility strategy. *Bus. Strateg. Environ.* 29 (1), 140–153.
- 38) Orlitzky, M., Siegel, D.S., Waldman, D.A., (2011). Strategic corporate social responsibility and environmental sustainability. *Bus. Soc.* 50 (1), 6–27.
- 39) Pekovic, S., Vogt, S., (2020). The fit between corporate social responsibility and corporate governance: the impact on a firm's financial performance. *Rev. Manag. Science.* in press. <https://doi.org/10.1007/s11846-020-00389-x>.
- 40) Rettab, B., Brik, A. B., & Mellahi, K. (2009). A study of management perceptions of the impact of corporate social responsibility on organisational performance in emerging economies: the case of Dubai. *Journal of Business Ethics*, 89(3), 371-390. <https://doi.org/10.1007/s10551-008-0005-9>
- 41) Rettab, B., Brik, A. B., & Mellahi, K. (2009). A study of management perceptions of the impact of corporate social responsibility on organisational performance in emerging economies: the case of Dubai. *Journal of Business Ethics*, 89(3), 371-390. <https://doi.org/10.1007/s10551-008-0005-9>.
- 42) Reverte, C., Gomez-Melero, E., & Cegarra-Navarro, J. G. (2016). The influence of corporate social responsibility practices on organizational performance: evidence from eco-responsible Spanish firms. *Journal of Cleaner Production*, 112, 2870-2884. <https://doi.org/10.1016/j.jclepro.2015.09.128>
- 43) Roscoe, J. T. (1975). *Fundamental research statistics for the behavioural sciences* (2nd ed.). Holt Rinehart and Winston.
- 44) Singh, S.K., Del Giudice, M., Chierici, R., Graziano, D., (2020). Green innovation and environmental performance: the role of green transformational leadership and green human resource management. *Technol. Forecast Soc. Change* 150, 119762.
- 45) Smith, M., Yahya, K., Amiruddin, A.M., (2007). Environmental disclosure and performance reporting in Malaysia. *Asian Review of Accounting* 15 (2), 185–199.
- 46) Suganthi, L. (2020). Investigating the relationship between corporate social responsibility and market, cost and environmental performance for sustainable business. *South African Journal of Business Management*, 51(1), 1-13. <https://doi.org/10.4102/sajbm.v51i1.1630>.
- 47) Tolliver, C., Keeley, A.R., Managi, S., (2020). Policy targets behind green bonds for renewable energy: do climate commitments matter? *Technol. Forecast Soc. Change* 157, 120051.
- 48) Turker, D. (2009). Measuring corporate social responsibility: a scale development study. *Journal of Business Ethics*, 85(4), 411–427. <https://doi.org/10.1007/s10551-008-9780-6>

- 49) Vallaster, C., Kraus, S., Kailer, N., Baldwin, B., (2019). Responsible entrepreneurship: Outlining the contingencies. *International Journal of Entrepreneurial Behavior & Research* 25 (3), 538–553.
- 50) Wu, T., Kung, C.-C., (2020). Carbon emissions, technology upgradation and financing risk of the green supply chain competition. *Technol. Forecast Soc. Change* 152, 119884.
- 51) Xiang, C., Chen, F., Jones, P., Xia, S., (2020). The effect of institutional investors' distraction on firms' corporate social responsibility engagement: evidence from China. *Rev. Manag. Sci.* in press. <https://doi.org/10.1007/s11846-020-00387-z>.
- 52) Xu, X., Zeng, S., Chen, H., (2018). Signaling good by doing good: how does environmental corporate social responsibility affect international expansion? *Bus. Strategy Environ.* 27 (7), 946–959.
- 53) Xu, Y., & Peng, Q. (2018). An empirical study on the relationship between green supplier development and firm performance. *American Journal of Industrial and Business Management*, 8, 930-945. <https://doi.org/10.4236/ajibm.2018.84064>.
- 54) YMIT. (2014). General report of the result of the comprehensive industrial survey 2010. Yemen Ministry of industry and trade.
- 55) Yu, W., Ramanathan, R., Nath, P., (2017). Environmental pressures and performance: an analysis of the roles of environmental innovation strategy and marketing capability. *Technol. Forecast Soc. Change* 117, 160–169.
- 56) Zailani, S., Jeyaraman, K., Vengadasan, G., Premkumar, R., (2012). Sustainable supply chain management (SSCM) in Malaysia: a survey. *Int. J. Prod. Econ.* 140 (1), 330–340.
- 57) Zhang, J., Liang, G., Feng, T., Yuan, C., Jiang, W., (2020). Green innovation to respond to environmental regulation: how external knowledge adoption and green absorptive capacity matter? *Bus. Strategy Environ.* 29 (1), 39–53.