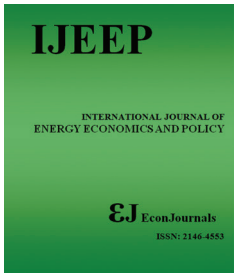

International Journal of Energy Economics and Policy

ISSN: 2146-4553

available at http: www.econjournals.com

International Journal of Energy Economics and Policy, 2022, 12(6), 447-455.

Nexus between Green Finance, Creativity, Energy Accounting and Financial Performance: Banks Sustainability Analysis from Developing Country

Ade Banani*, Bambang Sunarko

Faculty of Economics and Business, Universitas Jenderal Soedirman, Indonesia. *Email: a.banani@yahoo.com

Received: 01 September 2022 **Accepted:** 07 November 2022 **DOI:** https://doi.org/10.32479/ijeep.13806

ABSTRACT

Financial performance of financial institution especially banking sector is the essential element for economic growth and capture the attention of regulators and recent literature. Thus, this paper studies the effect of accessibility to green finance and conventional bank funding. Energy accounting and creativity on the banking sector's fiscal performance of developing countries. For this purpose, data was collected from the financial statements of twenty central banks of developing countries from 2009 to 2020. Generalized method of moments and random model is used to test the study hypotheses. Obtained results indicated that green investment, green credit, energy accounting and creativity are positive correlated with the financial performance of the banking sector in developing countries. This study provides guidelines to the policy-making authorities while developing regulations related to financial performance, green finance availability, and creativity.

Keywords: Efficiency, Financial Performance, Creativity, Bank Performance, Green Finance, Conventional Banks
JEL Classifications: F65, M41, Q56, Q01, O31, G21

1. INTRODUCTION

Assessment accuracy is not satisfying as many researchers conduct various studies regarding the efficiency of banking sectors. Economic Growth is very necessary to explore the backward countries and meet social objectives. Pakistan is a developing country, that's why there is a strong need to improve banking efficiency (Abdul Hamid et al., 2020; Baloch et al., 2021; Sadiq et al., 2021; Spash, 2020; Suryanto et al., 2021). Microfinance Institutions emerged as another financing cause and a powerful tool for poverty cutback among reasonably underprivileged populace throughout the terms of a wide collection of financial services such as loan, deposits, payment services, money move and assurance service trying hard to logically evaluate its advantages and disadvantages in the areas of goods, valuing, supply, organization structure communication and management policies. According to this intention, a bank practices diverse technique and want to discover the most appropriate combination of financial and non-financial indicators for further assessment. There are parametric and non-parametric approaches to efficiency evaluation. The most widely used method in the current banking sector is the non-parametric method, best known as the Data Envelopment Analysis. These models allow analyzing the effectiveness of transformation of numerous efforts into numerous productions with the usage of efficiency score (Ainou et al., 2022; Apostoaie and Bilan, 2020; Chien et al., 2021b; Nawaz et al., 2021; Shair et al., 2021).

The financial performance of businesses, whether they are financial institutions, manufacturing units, or some other service organizations, can be improved or sustained only when the innovation is maintained in all the organizational departments so that they can respond to the market requirements and the customers' preferences towards the products' or services' features (Ali et al., 2022; Al Mamun et al., 2021; Chien et al., 2021c; Hussain et al.,

2020). Business creativity leads to innovativeness and newness in business practices. Creativity can be defined as the ability of the employees in different business departments to address the issue in a new manner, the capability to stir the imagination and use it in presenting novel ideas about the concerned matter or issue (Bai et al., 2022; Chien, 2022a; Chien et al., 2021d; Ehsanullah et al., 2021; Kot et al., 2021; Sun et al., 2020). These creative competency helps individuals to analyze the complex situation, find a solution to problems or novel ways to handle the situation. The creative employees look at matters from some unique perspectives. Creativity is the intention or capability of the employees to generate novel ideas, alternatives, or changes which can assist in getting solutions to problems. Creativity encourages the organizational personnel to bring change in different activities which could add value to products/services and fulfills customers' needs in affective manner (Chien et al., 2022b; Chien et al., 2021e; Hussain et al., 2021b; Mikalef and Gupta, 2021; Sharma, 2020; Wu et al., 2021; Lan et al., 2021). However, the present study aims to explore the influence of green finance dimensions on firm's financial performance.

According to Ang et al. (2010), energy efficiency performance of any country is an essential part as it helps economies to achieve primary energy policy goals which are related to stability of energy and economic competitiveness. Thereby, the evidences show that energy performance measurement is grabbing attention of world economies. Meanwhile, MNCs are also considered to be one of the key pillars to address social and environmental issues as their practices are mainly associated with increasing revenues in short run regardless of adverse impact on environment. Recently, a societal concern is on rise regarding the damages these businesses have done to well-beings. Also, the hurting social and environmental factors might pose threat to these businesses' survival in a longer run (Azam et al., 2021; Jermsittiparsert, 2021; Ojogiwa, 2021). Thereby, companies are obliged to facilitate stakeholders with the knowledge and information which is necessary to show that the procedures not only benefit the economic growth but also contributes towards sustainable development. To attain this objective, organizations utilize various tools to show the effective and efficient natural resource management. In this regard the current study also adds a very important aspect of business process to the proposed framework in order to evaluate the firm's financial performance. Energy accounting is a kind of information system that is being exploit to measure, analyze and pass on the information related to energy use towards organizational daily activities (Goh and Ang, 2019; Hartani et al., 2021). The said construct is crucial as is it helps firms to improve the organizational energy efficiency. Also, it provides a resource to monitor the environmental impact of all sot of energy activities.

Further to discussion, sustainability trends have altered how businesses run their operations in a current aware market environment. Therefore, this ongoing idea has developed the new philological of business, by which businesses not only need to endure their economic asset (for stockholders) correspondingly their societal and predictable banks effect on the larger shareholders, specifically the public, customers, dealers, teams, shareholders and controlling authorities. Banks (Social and conventional) sustainability is not a novel approach (Sadiq et al., 2022a; Sadiq et al., 2022b). This word, "ESG" and its proposal was initially suggested in June 2004 by the United Nations Global Compact's dynamism called "Who Cares Wins" towards an emphasis on physical interaction among ecological, societal, and supremacy problems. There is a cumulative number of kinds of literature that approves factors of sustainability when joint together with portfolio policy and assets evaluation, can affect investors possibly long-term act (Chien et al., 2022c; Chien et al., 2021f; Dong et al., 2018; Hussain et al., 2021a; Zhuang et al., 2021).

This part of banks also takes part a significant role in sustainable Growth. Now, sustainability is one of the leading tendencies in the market. It can be in the system of an SRI investment or corporate governance (CSR), or corporate-focused investment and sustainability banking. Conferring to Sustainably Thematic Research, banks are at the core of each and every advanced economy - they drive economic systems such as the blood of the system, allowing novelty, economic development, and success. Though, the bit part of economic institutions frequently exceeds their unique role as mediators (Lan et al., 2022; Liu et al., 2022a; Liu et al., 2022b). This is well-known that the important role of the banking sector as the potential for financial development and profitability continued unquestionably; nevertheless, political society organizations, especially in developed countries, are increasingly concerned about how they can achieve this goal (Zhao et al., 2021b). Many have expressed the need for "moral capitalism" coupled with the social and general concern of banks. Banks have been censured by public societal groups for demanding greater management in terms of their connection in helping trades and expansion that harms the atmosphere, undermines human rights, and is linked to negative impacts on local communities (Chien, 2022d; Cheba et al., 2020; Chien et al., 2021g; Hsu et al., 2021; Khattak et al., 2021). While in all these cases, monetary organizations do not straight mark the community and the environment, they have the power to take this consequently by exercising their effect on the sponsoring businesses.

When evaluating its genuine condition, a bank is difficult to rationally evaluate its merits and demerits in the areas of products, pricing, allocation, announcement, management, and organizational policy. For this reason, a bank utilizes various methods and tries to find the primarily detailed grouping of financial and non-financial indicators to be utilized in the course of additional evaluation (Sadiq et al., 2022c; Tan et al., 2021; Zhao et al., 2022). The financial institutions or banks have a central position in any economy because it provides financial support to many business organizations and gives them a chance to survive in the market or to compete against and accelerate over the rival businesses. Financial institutions, like other businesses, need to have high financial performance to compete efficiently in the financial market. There has been a need to focus on the ways how to promote banking financial position in the selected developing economies (Chien et al., 2022; Kamarudin et al., 2021; Li et al., 2021; Wei et al., 2021; Mohsin et al., 2021; Piligrimienė et al., 2021). Thereby, the study contributes to the literature in three ways. First, the study is one of the initial attempts to explore the role of

green finances in getting high financial performance instead of just environmental performance. Second, the amalgamation of green finance and creativity for the analyses of financial performance. Third, the selection of conventional banks in Asian developing countries.

The next part of the study blueprints the association of green finance dimensions on financial performance of the firms in the light of different researchers' arguments. Methodology parts talks about the applied methods which helps authors to provide empirical evidences of the relationship of green finance like green investment, green credits, creativity, and firm's size with return on equity and financial performance of the firms. Then through proper discussion and implications, the results are approved, and the significance of the study is shown. In the last, the overall study is concluded.

2. LITERATURE REVIEW

Banks are involved in helping the necessity of the community to shape a solid foundation for the forthcoming sustainable business development. As noted by Sadiq et al. (2021), the bank's consistency with good practices of sustainable disclosure and integration of standard banks and the size of the environment in annual reports shows bankers' assurance in increasing visibility and dropping evidence irregularity and financing-related costs. "technical studies are investigating the motives of banks to progress the value of their ESG disclosures. For example, Maqbool and Zameer (2018), based upon a study of 22 banks from India, determined that CSR pouring objectives are linked between strategic selection, self-sacrifice, and green bathing. Dedicated banks perform community empowerment activities for their own benefit, thus adversely affecting the financial performance of banks. However, the motive for the strategy is to improve financial performance through CSR engagement, while green emphasis activities are trying to improve the company's image without drastically changing the business. When issuing notes, all listed banks have replaced them in annual reports and bank websites. However, in contrast to the bank's website rankings, the annual report has a higher exposure to all categories of corporate sustainability (CSD) practices (except product burden). With traditional banks and economic scale assessments, people find that problems related to social scale are more common. They found that, unlike traditional bank classification, Islamic banks disclosed more details about stability, and for three generations of different banks, the old bank did not surpass this smaller bank is revealing consistency. Especially in the basic knowledge of banking as a driving force. The largest banks in the United States had the greatest social stability and public attention. Potential. Asset banks with the power of scale are more active in ESG disclosure. General banking and social services incur costs in banks (Bilan et al., 2020; Haroon et al., 2021; Huang et al., 2020; Kubenka, 2020; Li et al., 2021).

Al-Homaidi et al. (2020), examined 385 banks for the connection between social cohesion and finance. The conclusions propose a good relation amid the societal and economic efficiency of banks; though, the research sample covers only United States banking organizations. They have used the OLS method and utilized the United States Community Reinvestment Act rating outline as a degree of community performance. Regarding the part of supremacy, according to a common banking concept. Nawaz et al. (2021), found that reducing the normal banking costs takes no less than one or two years before increasing asset returns. Plummeting the normal cost of banks has a rapid and significant impact on the efficiency of financial facilities companies, particularly in advanced monetary marketplaces. They similarly suggested that commercial governance should focus not only on manufacturing but also on financial services. Liu et al. (2021) and Filimonova et al. (2020) points out the negative relationship between social stability and financial performance, even though there is a small sample of banks in 21 countries and without regard to normal banking stability.

Leading research was conducted by Guilford (2017) to identify the association of creativity and the financial performance of the firms. This research elaborates that business creativity refers to employees' creative thinking or ideas that they use while executing business activities in the best interests of institutions, such as eliminating inefficiencies in business procedures and goods and improving product and service quality. In the market, there is a high need for high-quality items that meet the needs of customers in terms of innovation. A large market for products and services is required to achieve improved financial success, which is made feasible through creativity (Shibli et al., 2021; Wenjing Li et al., 2020). In addition, Ismail et al. (2020), presents their views about the business creativity and its influences on the Employees with creative talents like as curiosity, open-mindedness, imagination, observation, critical analysis, decision-making, and problem-solving can effectively respond to market demands for product and service excellence. This results in increased profitability and sales growth. The intellectuals like Li and Sandino (2018) opine about the role of creativity in getting sustainable business performance (environmental, social, and financial performance). This study elaborates that creativity brings a change in the technologies used in departments of the firms. The improved quality of the technologies creates agility, enhances productivity, quality of the products and services and also increases marketing for goods meeting the requirements of the customers. The increased production and marketing of quality goods minimizes the costs and generates more profits.

Firm performance is typically calculated through financials and productivity measures; however, these measures are not effective when it comes to evaluate sustainable performance (Tangen, 2004). Due to social and political pressures firms are obliged to incorporate environmental and social pillars in their performance (Herremans et al., 2016). This way, the pressure from society pushes organizations to be come up transparent regarding sustainability. Today, we can say that the profession of accounting contradicts with capitalist systems aims which have a focus on deriving profits. Existing accounting methods thereby employed to measure financial values for firms and large investors. Also, existing accounting systems do not have potential to disclose social and environmental costs due to which accountants along with investors raise question marks on the ability conventional

financial systems which provides necessary information to evaluate the performance (Ong et al., 2010). Energy accounting systems, however on other hand, are that kind of information system which have the potential to evaluate energy usage which is being utilized by organization in its daily activities. The system comprises of accounting theories and methods which has the ability to provide information that is needed to assess the efficiency of energy management (Wirsbinna and Grega, 2021). Thereby, the argument concludes that energy accounting systems and firm performance are interlinked with each other.

3. DATA AND METHODOLOGY

This study investigates the impact of green finance and creativity on the fiscal performance of the banking sector of developing countries. The data were collected from the financial statements of twenty central banks of developing countries from 2009 to 2020. Random effect model and GMM is employed to test the nexus between the understudy constructs. The equation of the present study is given below:

$$ROE_{it} = \alpha_0 + \beta_1 GINV_{it} + \beta_2 GC_{it} + \beta_3 CR_{it} + \beta_4 BS_{it} + \beta_4 EAS_{it} + e_{it} \quad (1)$$

Where;
ROE represents return on equity
I represent the symbol of Bank
t shows Time Period
GIINV = Green Investment
GC = Green Credit
CR = Creativity
EAS = Energy Accounting systems
BS = Bank Size

Return on equity has been used as the dependent and green finance and creativity has been used as the independent variable. Finally, bank size has been used as the control variable. Table 1 shows the measurements of understudy variables.

The results section shows the descriptive statistics highlighting the data normality. In addition, results section also shows the correlation matrix to identify strength and weakness among variables. variance inflation factor (VIF) has also been applied to check the multicollinearity assumption. The equations of VIF are given below:

$$R^2_Y \rightarrow Y_{it} = \alpha_0 + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 X_{6it} + e_i \quad (2)$$

$$j = R^2_Y, R^2_{X1}, R^2_{X2}, R^2_{X3}, R^2_{X4}, R^2_{X5}, R^2_{X6} \quad (3)$$

$$Tolrance = 1 - R^2_j \; VIF = \frac{1}{Tolerance} \quad (4)$$

The following section also shows the REM that is a suitable model selected by using the Hausman test. The REM shows the relations among the constructs. In addition, REM makes unconditional inferences of population and more diverse characteristics than the fixed number of studies. In particular, the random effect (RE) is a key feature in a "posterior risk" classification. (Lee et al., 2020). The equation for REM are given below:

$$Y_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 X_{6it} + \varepsilon_i + u_{it} \quad (5)$$

$$Y_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + w_{it} \quad (6)$$

The REM equation under the study constructs is stated below:

$$ROE_{it} = \beta_1 + \beta_2 GINV_{it} + \beta_3 GC_{it} + \beta_4 CR_{it} + \beta_5 BS_{it} + \beta_6 EAS_{6it} + w_{it} \quad (7)$$

The researcher has also used the GMM to test the relationships because the model usually has "heterogeneity issues." The GMM equation is given as below:

$$Y_{it} = \delta Y_{i,t-1} + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + u_{it} + \varepsilon_{it} \quad (8)$$

GMM also provides the best estimation in "autocorrelation" and "heteroscedasticity" issues are exist. The GMM equation for the present study is constructed below:

$$ROE_{it} = \delta ROE_{i,t-1} + \beta_1 GINV_{it} + \beta_2 GC_{it} + \beta_3 CR_{it} + \beta_4 BS_{it} + u_{it} + \varepsilon_{it} \quad (9)$$

4. EMPIRICAL RESULTS

The results section shows the descriptive statistics that are highlighted the minimum and maximum values and also highlighted the mean and standard deviations. ROE's avg value is 13.008 following GINV 0.636, GC 0.208, CR 1.060 and BS 5.019. Table 2 related to descriptive statistics is given below:

As mentioned earlier, the correlation test has been performed to evaluate the strength and weakness among variables. The values

Table 1: Measurements of variables

S#	Variables	Measurements
01	Return on Equity	The ratio of net income after tax and total equity
02	Green Investment	Green investment (% total investment)
03	Green Credit	Green credit (% of total credit)
04	Creativity	Research and development expenditures (% of total expenditures)
05	Bank Size	The logarithm of total assets

Table 2: Descriptive statistics

Variable	Obs	Mean	SD	Min	Max
ROE	240	13.008	17.914	−94.38	65.89
GINV	240	0.636	0.551	0.179	0.937
GC	240	0.208	0.185	0.145	0.771
EAS	240	0.302	0.167	0.181	0.812
CR	240	1.060	1.850	0.180	5.116
BS	240	5.019	0.834	2.862	6.399

from Table 3 depicts that all of the constructs' values are positive means the association among variables are stronger.

Moreover, the results section also shows the VIF that highlighted the multicollinearity assumption. The findings revealed that the VIF values are smaller than five that means no multicollinearity issue in the model. Table 4 related to the VIF is given as under:

Hausman test has applied in order to check the suitability of model. According to results REM model is appropriate as the significance value is less than 5%. Table 5 related to the Hausman test is given as under:

Firstly, REM was evaluated to check association among variables. The results indicated that green investment along with green credit and creativity share a positive connection with the financial performance of the banking sector in developing countries. In addition, 70.8 percent variation in ROE is due to the selected predictors and control variables. Table 6 related to REM is given as under:

Finally, GMM has been tested in order to investigate the relationship between constructs. The results also indicated that green investment along with green credit, and creativity share positive connection with financial performance of the banking sector in developing countries. Table 7 related to the GMM is given as under:

Table 3: Matrix of correlations

Variables	ROE	GINV	GC	CR	BS	EAS
ROE	1.000					
GINV	0.527	1.000				
GC	0.038	0.198	1.000			
CR	0.803	0.382	0.009	1.000		
BS	0.270	0.101	-0.483	0.159	1.000	
EAS	0.123	0.235	0.121	0.221	0.012	1.000

Table 4: VIF test

	VIF	1/VIF
GC	1.418	0.705
BS	1.393	0.718
GINV	1.263	0.792
CR	1.192	0.839
EAS	1.212	
Mean VIF	1.296	

Table 5: Hausman specification test

	Coef.
Chi-square	16.453
Sig.value	0.002

5. DISCUSSIONS AND IMPLICATIONS

The obtained results have indicated that green investment, the dimension of green finance, is positively correlated with ROE which determines the financial performance of the firms. The study implies that as the new generation now addresses environmental issues and values the importance of environmental quality. Thereby, the firms which show concern regarding public's environmental requirements through green investments enjoy a good reputation which results in enhanced profitability and high financial performance. The findings show consistency with literary work out of Le et al. (2020), which explains that firms that invest in ecological friendly projects in order to sustain environmental quality by removing the negative environmental impacts of economic activities, have good quality products and services and larger marketing for those products and services. Thus, the return on equity is high, which determines the higher financial performance of the firms. These results are also supported by the past study of Ren et al. (2020), and Zhao et al. (2021a), which shows the contributing role of green investment in getting higher financial performance.

This study elaborates that the tendency of the firms to spend money on the application of green policies like acquiring green material, technology, logistics, and production techniques, improves the quality and quantity of products and services. Thus, there is more marketing and more profits. Findings also indicates that green credit which is the dimension of green finance is positively correlated with the ROE determining financial performance. The study posits that the issuance of the credits on the part of financial institutions or banks to the general public, business units, or other financial institutions, especially for making an investment in implementing their ecological policies and strategies to meet the requirements of their customers, and the general public. In this situation, they can satisfy their customers and increase marketing for their products and services. Consequently, there is the high rate of return and high business performance. Findings show consistency with Muganyi et al. (2021) and Kaczmarek et al. (2020), which examines the role of green credit in achieving high financial performance. The financial institutions that offer credits to stakeholders on easy conditions and through convenient processes with an intention to encourage environmental development of the

Table 6: Random effect model

ROE	Beta.	SD	t-value	P-value	LL	UL	Sig.
GINV	6.888	1.249	5.52	0.000	4.440	9.335	***
GC	3.615	1.090	3.32	0.015	1.631	4.401	**
CR	6.265	0.403	15.53	0.000	5.475	7.056	***
BS	3.364	1.323	2.54	0.023	2.428	5.757	**
EAS	2.423	0.235	3.41	0.002	3.231	6.043	***
Constant	1.361	0.104	13.09	0.000	9.204	16.483	***
Overall r-squared		0.708		Number of obs		240	
Chi-square		399.507		Prob>chi2		0.000	
R-squared within		0.600		R-squared between		0.830	

*** P<0.01, ** P<0.05, *P<0.1

Table 7: GMM

ROE	Beta	SD	t-value	P-value	LL	UL	Sig.
GINV	6.573	1.945	3.38	0.001	2.739	10.407	***
GC	13.500	7.908	1.71	0.089	2.085	29.086	*
CR	5.260	0.780	6.74	0.000	3.723	6.798	***
BS	2.990	1.358	2.20	0.034	7.636	9.657	**
EAS	5.212	0.237	3.121	0.041	6.176	9.126	**

*** P<0.01, **P<0.05, *P<0.1

country and disclose it in its annual reports have the government supports and popularity among clients who prefer to deal with them. Hence, marketing for their products and profitability increase which determines high performance. The evidences are also consistent with Berrou et al. (2019), which elaborates that green finances like green credit in any form strengthen the financial position of the firms which benefit from this green initiative. They have the ability to arrange for the analysis for finding flaws in their business processes and resources, which can have adverse impacts on the natural environment, the quality of natural resources, and the health of the living beings. This also improves the quality of the environment, and the labor can perform business functions more effectively, having sound health. This improves the operational and financial performance of the firms.

Creativity, according to results, is also found to be associated with the return on equity in positive manners which derives the financial performance of the firm. Obtained findings are also supported by Ismail et al. (2020), which elaborates that business creativity which is the novel thinking or ideas of employees which they employ while performing the business functions in the best interest of institutions, remove the deficiency of business techniques and products, improve the quality of products and services. The good quality products which are up to innovation requirements of customers have great demand in the market. For achieving higher financial performance, the huge market for the products and services is needed, which becomes possible with Creativity. This study suggests that when the employees in an organization have creative skills, they can respond effectively to market requirements about the quality of products and customers services. This leads to high sales growth and more profitability. It has also been indicated by the study results that the firm size is in a positive association with the return on equity or financial performance. These results agree with the results of the past study of Mehta et al. (2017) which analyzes the factors which play a critical role in achieving higher financial performance. This study throws light on the point that the firms' size, which is represented by total firm assets against its liabilities helpful in getting more return on equity. Businesses having large firm sizes can mitigate the financial risks, respond to urgent needs, and enhances products and services quality. These products and services can derive more profits, and the firm thus can enjoy a high financial position. Meddour et al. (2019) study also supports this study. According to the results of this study, the large firm size enables the business to acquire the services of skilled workers. The skilled workers have the required knowledge, up-to-date information, cognitive and physical working skills which improve their overall performance in the firm. In such a situation, all the business departments show effective performance.

The present study successfully achieves a significant position in the existing literature because of its significant contribution. This study throws light on the significance of financial institutions, green touch in finances, innovation and Creativity, and strength of the firm. This study examines the role of green investment, green credit, Creativity, and firms' size in getting the higher financial performance. In the past, the researchers have primarily focused on the influences of green finance like green investment and green credit on the environmental performance of the firms. Rarely, the studies have discussed the influences of green investment and green credit on the financial performance of firms. This study attempts to give a detailed description of the association of green investment and green credit with financial performance. Here, the financial performance of the firms has been indicated with the help of return on equity which itself is a contribution to literature. This study offers a theoretical guideline for the policymakers at financial institutions like banks, business organizations, and economists on how they must act to raise the financial position of the firms. This study highlights that the financial performance can be improved by raising the return on equity through green finance, Creativity, and enlarging the firm's size.

6. CONCLUSION

The objective behind conducting this study was to ensure the contributing role of integration of environmental behavior with financial institutions in getting the higher financial position. The aim of the study was also to clarify how much effective are the business creativity and the firms' size in enhancing the return on equity. The study analyzes the extent to which green finance like green investment, green credits, Creativity, and firms' size are effective and useful in getting a high rate of return which determines financial performance by getting relevant data from the commercial banks in selected developing countries. The results of the study show positive influences of green investment, green credits, Creativity, and firms' size on the firm's ROE and financial development. These results indicated that when the firms make investments in the green programs whose objective is to mitigate the harmful impacts of their business activities on atmospheric quality, natural resources, and health of living beings. This enhances the goodwill of the firms and assists in achieving sustainable financial performance. Similarly, the issuances of green loans and climate credit cards to meet the financial needs of the clients, business organizations, or other financial institutions on easy conditions results in the production of ecological friendly products and services. This guarantees high financial performance. The creativity and innovativeness in the organization helps carry out the business activities effectively and efficiently according to the market trends and improves the return on equity. The also concluded that firms' size improves business effectiveness and financial performance.

Though the study has great significance in the developing economies, it is confronted to many limitations which are recommended to be removed in the future research. This study talks about the role of green investment, green credits, creativity, and firms' size on the firm's ROE and financial development in the developing economies. The developing countries have different

environmental characteristics, economic conditions, and financial policies from those of developed countries. The same study cannot be equally valid in developed countries. Therefore, the upcoming researchers must analyze the understudy constructs in both developed and developing countries. The data for the analysis of the influences of green investment, green credits, creativity, and firms' size on the firm's ROE and financial development is extracted from developing countries for the period of 2005-2018. The authors in future must collect data for extended time period for more validity.

REFERENCES

Abdul Hamid, B., Azmi, W., Ali, M. (2020), Bank risk and financial development: Evidence from dual banking countries. Emerging Markets Finance and Trade, 56(2), 286-304.

Ainou, F.Z., Ali, M., Sadiq, M. (2022), Green energy security assessment in Morocco: Green finance as a step toward sustainable energy transition. Environmental Science and Pollution Research, Doi: 10.1007/s11356-022-19153-7.

Al-Homaidi, E.A., Almaqtari, F.A., Yahya, A.T., Khaled, A.S. (2020), Internal and external determinants of listed commercial banks' profitability in India: Dynamic GMM approach. International Journal of Monetary Economics and Finance, 13(1), 34-67.

Ali, M., Ibrahim, M.H., Shah, M.E. (2022), Impact of non-intermediation activities of banks on economic growth and volatility: An Evidence from OIC. The Singapore Economic Review, 67(1), 333-348.

Al Mamun, A., Muniady, R., Nasir, N.A.B. (2021), Effect of participation in development initiatives on competitive advantages, performance, and sustainability of micro-enterprises in Malaysia. Contemporary Economics, 15(2), 122-138.

Ang, B.W., Mu, A., Zhou, P. (2010), Accounting frameworks for tracking energy efficiency trends. Energy Economics, 32(5), 1209-1219.

Apostoaie, C. M., Bilan, I. (2020), Macro determinants of shadow banking in Central and Eastern European countries. Economic research-Ekonomska istraživanja, 33(1), 1146-1171.

Bai, X., Wang, K.T., Tran, T.K., Sadiq, M., Trung, L.M., Khudoykulov, K. (2022), Measuring China's green economic recovery and energy environment sustainability: Econometric analysis of sustainable development goals. Economic Analysis and Policy, 75, 768-779.

Baloch, Z.A., Tan, Q., Kamran, H.W., Nawaz, M.A., Albashar, G., Hameed, J. (2021), A multi-perspective assessment approach of renewable energy production: Policy perspective analysis. Environment, Development and Sustainability, 24, 1-29.

Berrou, R., Dessertine, P., Migliorelli, M. (2019), An overview of green finance. The Rise of Green Finance in Europe, 13, 3-29.

Bilan, Y., Hussain, H.I., Haseeb, M., Kot, S. (2020), Sustainability and economic performance: Role of organizational learning and innovation. Engineering Economics, 31(1), 93-103.

Cheba, K., Bąk, I., Szopik-Depczyńska, K. (2020), Sustainable competitiveness as a new economic category-definition and measurement assessment. Technological and Economic Development of Economy, 26(6), 1399-1421.

Chien, F. (2022a), How renewable energy and non-renewable energy affect environmental excellence in N-11 economies? Renewable Energy, 196(2), 13.

Chien, F., Zhang, Y., Sharif, A., Sadiq, M., Hieu, M.V. (2022b), Does air pollution affect the tourism industry in the USA? Evidence from the quantile autoregressive distributed lagged approach. Tourism Economics, Doi: 10.1177/13548166221097021.

Chien, F., Chau, K.Y., Sadiq, M., Hsu, C.C. (2022c), The impact of economic and non-economic determinants on the natural resources commodity prices volatility in China. Resources Policy, 78, 102863.

Chien, F. (2022d), The mediating role of energy efficiency on the relationship between sharing economy benefits and sustainable development goals (Case Of China). Journal of Innovation and Knowledge, 7, 100270.

Chien, F., Hsu, C.C., Sibghatullah, A., Hieu, V.M., Phan, T.T.H., Hoang Tien, N. (2021a), The role of technological innovation and cleaner energy towards the environment in ASEAN countries: Proposing a policy for sustainable development goals. Economic Research-Ekonomska Istraživanja, 35, 4677-4692.

Chien, F., Kamran, H.W., Nawaz, M.A., Thach, N.N., Long, P.D., Baloch, Z.A. (2021b), Assessing the prioritization of barriers toward green innovation: Small and medium enterprises Nexus. Environment, Development and Sustainability, 24, 1897-1927.

Chien, F., Ngo, Q.T., Hsu, C.C., Chau, K.Y., Iram, R. (2021c), Assessing the mechanism of barriers towards green finance and public spending in small and medium enterprises from developed countries. Environmental Science and Pollution Research, 28, 60495-60510.

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, 1-22.

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, 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.

Dong, K., Hochman, G., Zhang, Y., Sun, R., Li, H., Liao, H. (2018), CO_2 emissions, economic and population growth, and renewable energy: Empirical evidence across regions. Energy Economics, 75, 180-192.

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, 55041-55052.

Filimonova, I., Komarova, A., Mishenin, M. (2020), Impact of the global green factor on the capitalization of oil companies in Russia. Oeconomia Copernicana, 11(2), 309-324.

Goh, T., Ang, B. (2019), Comprehensive economy-wide energy efficiency and emissions accounting systems for tracking national progress. Energy Efficiency, 12(8), 1951-1971.

Guilford, J.P. (2017), Creativity: A Quarter Century of Progress Perspectives in Creativity. United Kingdom: Routledge. p37-59.

Haroon, O., Ali, M., Khan, A., Khattak, M.A., Rizvi, S.A.R. (2021), Financial market risks during the COVID-19 Pandemic. Emerging Markets Finance and Trade, 57(8), 2407-2414.

Hartani, N.H., Haron, N., Tajuddin, N.I.I. (2021), The impact of strategic alignment on the sustainable competitive advantages: Mediating role of it implementation success and it managerial resource. International Journal of eBusiness and eGovernment Studies, 13(1), 78-96.

Herremans, I.M., Nazari, J.A., Mahmoudian, F. (2016), Stakeholder relationships, engagement, and sustainability reporting. Journal of Business Ethics, 138(3), 417-435.

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., Chau, K.Y., Chien, F., Shen, H. (2020), The impact of startups' dual learning on their green innovation capability: The effects of business executives' environmental awareness and environmental regulations. Sustainability, 12(16), 1-17.
Hussain, H.I., Kamarudin, F., Mohamad Anwar, N.A., Nassir, A.M., Sufian, F., Mang Tan, K. (2020), Impact of country's governance dimensions on bank revenue efficiency: Overview on Middle East, Southeast Asia, and South Asia countries. Transformations in Business and Economics, 19(1), 191-228.
Hussain, H.I., Kot, S., Kamarudin, F., Yee, L.H. (2021a), Impact of rule of law and government size to the microfinance efficiency. Economic Research, 34(1), 1870-1895.
Hussain, H.I., Szczepańska-Woszczyna, K., Kamarudin, F., Anwar, N.A.M., Saudi, M.H.M. (2021b), Unboxing the black box on the dimensions of social globalisation and the efficiency of microfinance institutions in Asia. Oeconomia Copernicana, 12(3), 557-592.
Ismail, A.I., Abdul-Majid, A.H., Ameen, A., Raza, S., Akindele, I.T. (2020), Using employee creativity to unpack the 'black box'in the high-performance work system (HPWS)-firm performance nexus Managing Knowledge, Absorptive Capacity and Innovation. Singapore: World Scientific. p407-436.
Jermsittiparsert, K. (2021), Linkage between energy consumption, natural environment pollution, and public health dynamics in ASEAN. International Journal of Economics and Finance Studies, 13(2), 1-21.
Kamarudin, F., Anwar, N.A.M., Chien, F., Sadiq, M. (2021), Efficiency of microfinance institutions and economic freedom nexus: Empirical evidence from four selected ASIAN countries. Transformations in Business and Economics, 20(2b), 845-868.
Kaczmarek, J., Alonso, S.L.N., Sokołowski, A., Fijorek, K., Denkowska, S. (2021), Financial threat profiles of industrial enterprises in Poland. Oeconomia Copernicana, 12(2), 463-498.
Khattak, M.A., Ali, M., Rizvi, S.A.R. (2021), Predicting the European stock market during COVID-19: A machine learning approach. MethodsX, 8, 101198.
Kot, S., Hussain, H.I., Bilan, S., Haseeb, M., Mihardjo, L.W. (2021), The role of artificial intelligence recruitment and quality to explain the phenomenon of employer reputation. Journal of Business Economics and Management, 22(4), 867-883.
Kubenka, M. (2020), The evaluation of methodology influence on the wacc value: The case of the czech republic. Transformations in Business and Economics, 19(3), 1-15.
Lan, T., Chen, Y., Li, H., Guo, L., Huang, J. (2021), From driver to enabler: The moderating effect of corporate social responsibility on firm performance. Economic Research-Ekonomska Istraživanja, 34(1), 2240-2262.
Lan, J., Khan, S.U., Sadiq, M., Chien, F., Baloch, Z.A. (2022), Evaluating energy poverty and its effects using multi-dimensional based DEA-like mathematical composite indicator approach: Findings from Asia. Energy Policy, 165, 112933.
Le, T.H., Le, H.C., Taghizadeh-Hesary, F. (2020), Does financial inclusion impact CO_2 emissions? Evidence from Asia. Finance Research Letters, 34, 14-29.
Lee, W., Kim, J., Ahn, J.Y. (2020), The Poisson random effect model for experience ratemaking: Limitations and alternative solutions. Insurance: Mathematics and Economics, 91, 26-36.
Li, S.X., Sandino, T. (2018), Effects of an information sharing system on employee creativity, engagement, and performance. Journal of Accounting Research, 56(2), 713-747.
Li, W., Bhutto, T.A., Xuhui, W., Maitlo, Q., Zafar, A.U., Bhutto, N.A. (2020), Unlocking employees' green creativity: The effects of green transformational leadership, green intrinsic, and extrinsic motivation. Journal of Cleaner Production, 255, 120-129.
Li, W., Chien, F., Hsu, C.C., Zhang, Y., Nawaz, M.A., Iqbal, S., Mohsin, M. (2021), Nexus between energy poverty and energy efficiency: Estimating the long-run dynamics. Resources Policy, 72, 102063.
Li, W., Chien, F., Kamran, H.W., Aldeehani, T.M., Sadiq, M., Nguyen, V.C., Taghizadeh-Hesary, F. (2021), The nexus between COVID-19 fear and stock market volatility. Economic Research-Ekonomska Istraživanja, 35, 1-22.
Liu, Z., Yin, T., Surya Putra, A.R., Sadiq, M. (2022a), Public spending as a new determinate of sustainable development goal and green economic recovery: Policy perspective analysis in the Post-Covid ERA. Climate Change Economics, 13, 2240007.
Liu, Z., Lan, J., Chien, F., Sadiq, M., Nawaz, M.A. (2022b), Role of tourism development in environmental degradation: A step towards emission reduction. Journal of Environmental Management, 303, 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. Resources Policy, 74, 102309.
Maqbool, S., Zameer, M.N. (2018), Corporate social responsibility and financial performance: An empirical analysis of Indian banks. Future Business Journal, 4(1), 84-93.
Meddour, H., Majid, A.H.A., Abdussalaam, I.I. (2019), Mediating Effect of Employee Creativity on the Relationship between Hpws and firm performance. Paper Presented at the E-Proceeding of the International Conference on Economic, Entrepreneurship and Management 2019.
Mehta, R., Dahl, D.W., Zhu, R.J. (2017), Social-recognition versus financial incentives? Exploring the effects of creativity-contingent external rewards on creative performance. Journal of Consumer Research, 44(3), 536-553.
Mikalef, P., Gupta, M. (2021), Artificial intelligence capability: Conceptualization, measurement calibration, and empirical study on its impact on organizational creativity and firm performance. Information and Management, 58(3), 103-114.
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.
Muganyi, T., Yan, L., Sun, H.P. (2021), Green finance, fintech and environmental protection: Evidence from China. Environmental Science and Ecotechnology, 7, 100-115.
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.
Ojogiwa, O.T. (2021), The crux of strategic leadership for a transformed public sector management in Nigeria. International Journal of Business and Management Studies, 13(1), 83-96.
Ong, G.P., Sinha, K.C., Fwa, T.F. (2010), Strategies for achieving sustainability through integrated transportation and urban development in the USA and Asia. Asian Transport Studies, 1(1), 89-104.
Piligrimienė, Ž., Banytė, J., Dovalienė, A., Gadeikienė, A., Korzilius, H. (2021), Sustainable consumption patterns in different settings. Engineering Economics, 32(3), 278-291.

Ren, X., Shao, Q., Zhong, R. (2020), Nexus between green finance, non-fossil energy use, and carbon intensity: Empirical evidence from China based on a vector error correction model. Journal of Cleaner Production, 277, 122-139.

Sadiq, M., Ngo, T.Q., Pantamee, A.A., Khudoykulov, K., Ngan, T.T., Tan, L.L. (2022a), The role of environmental social and governance in achieving sustainable development goals: Evidence from ASEAN countries, Economic Research-Ekonomska Istraživanja, Doi: 10.1080/1331677X.2022.2072357

Sadiq, M., Amayri, M.A., Paramaiah, C., Mai, N.H., Ngo, T.Q., Phan, T.T.H. (2022b), How green finance and financial development promote green economic growth: Deployment of clean energy sources in South Asia. Environmental Science and Pollution Research, 29(43), 65521-65534.

Sadiq, M., Ou, J.P., Duong, K.D., Van, L., Ngo, T.Q., Bui, T.X. (2022c), The influence of economic factors on the sustainable energy consumption: Evidence from China, Economic Research-Ekonomska Istraživanja, Doi: 10.1080/1331677X.2022.2093244

Sadiq, M., Hsu, C.C., Zhang, Y., Chien, F. (2021), 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., Ehsanullah, S., Iqbal, N. (2021), Does green finance matter for sustainable entrepreneurship and environmental corporate social responsibility during COVID-19? China Finance Review International, 12(2), 317-333.

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.

Spash, C.L. (2020), The economy'as if people mattered: Revisiting critiques of economic growth in a time of crisis. Globalizations, 18, 1087-1104.

Sharma, S.K. (2020), Financial development and economic growth in selected Asian economies: A dynamic panel ARDL test. Contemporary Economics, 14(2), 201-219.

Shibli, R., Saifan, S., Ab Yajid, M.S., Khatibi, A. (2021), Mediating role of entrepreneurial marketing between green marketing and green management in predicting sustainable performance in Malaysia's organic agriculture sector. AgBioForum, 23(2), 37-49.

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, 9875-9897.

Suryanto, H., Degeng, I.N.S., Djatmika, E.T., Kuswandi, D. (2021), The effect of creative problem solving with the intervention social skills on the performance of creative tasks. Creativity Studies, 14(2), 323-335.

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.

Tangen, S. (2004), Performance measurement: From philosophy to practice. International Journal of Productivity and Performance Management, 53(8), 726-737.

Wei, C., Wu, J., Guo, Y., Wei, G. (2021), Green supplier selection based on CODAS method in probabilistic uncertain linguistic environment. Technological and Economic Development of Economy, 27(3), 530-549.

Wirsbinna, A., Grega, L. (2021), Assessment of economic benefits of smart city initiatives. Cuadernos de Economía, 44(126), 45-56.

Wu, X., Sadiq, M., Chien, F., Ngo, Q.T., 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, 66736-66750.

Zhao, L., Zhang, Y., Sadiq, M., Hieu, V.M., Ngo, T.Q. (2021a), Testing green fiscal policies for green investment, innovation and green productivity amid the COVID-19 era. Economic Change and Restructuring. Doi: 10.1007/s10644-021-09367-z

Zhao, L., Chau, K.Y., Tran, T.K., Sadiq, M., Xuyen, N.T.M., Phan, T.T.H. (2022), Enhancing green economic recovery through green bonds financing and energy efficiency investments. Economic Analysis and Policy, 76, 488-501.

Zhao, L., Zhang, D., Zhu, T., Zhang, T., Wu, F. (2021b), Influences of venture capital on enterprise financing constraints and sustainable growth abilities from the perspective of lifecycle. Transformations in Business and Economics, 20(1), 69-92.

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.