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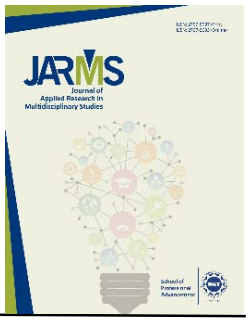

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Author (s): Saba Iqbal, Safia Nosheen

Affiliation (s): University of Management and Technology, Lahore, Pakistan

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Adoption of Sustainable Development Goals in the Banking Sector Concerning the Risk of Banks

Saba Iqbal*, and Safia Nosheen

Department of Banking and Finance, University of Management and Technology, Lahore, Pakistan

Abstract

The proposal of sustainable development goals (SDGs) by the United Nations has motivated the banks to implement sustainability practices for sustainable banking and long-term survival. Besides analyzing the impact of these SDGs on the financial performance of the banks, analysis of relationship between the SDGs and the risk of the banks has also been considered vital to see the future uncertainty position. Therefore, the current study fills the gap by investigating SDGs link with the risk of banks especially concerning the Asia Pacific region. The main hypothesis of this study is to analyze the impact of the adoption of SDGs on the risk of the banks. The economic, social, and environmental indicators proposed by the UN's statistical division are measured by SDGs. For this purpose, a variable ESE index was constructed in this study Furthermore, a partial equilibrium model was constructed to see the moderating impact of bank size and the ESE index. Panel data from 45 banks were collected from the Asia Pacific region. Data was analyzed through two-step system GMM technique. A separate analysis of economic, social, and environmental indicators were also deployed to study the impact of risks of banks in sustainable banking. First it gives insight that adoption of SDGs is important for risk reduction. Secondly large banks must be vigilant in the adoption of SDG as this adoption does not significantly minimize the risk in large banks.. ESE index construction is the novelty of this study.

***Keywords*:** banks, ESE index, risk, sustainable development goals, sustainable banking

Introduction

The adoption of sustainable development goals (SDGs) are becoming increasingly important concerning the financial performance of the banking sector. However, the relationship of SDGs with risk has been neglected in prior research despite being an important aspect of the organizations. SDGs

* Corresponding Author: sababasit2315@gmail.com

are among the top agenda of organizations for 2030, who are eager to adopt SDGs for their financial performance. However, these organizations are giving less importance to the adoption of SDGs on the risk to organizations. Risk is an important factor and organizations must strive to mitigate it for better financial performance. Among these organizations, banks are often confronted with many risks because sustainability practices like social inequality, climate change, health and education, and environmental degradation can create risks to the long-term stability and survival of the financial industry (Liu & Huang, 2022). The adoption of SDGs affects the risk of banks in many ways. Banks, which adopted sustainability practices, had to divert their funds flow toward more sustainable financing. Banks can successfully adopt the sustainable financing practices, which are likely to benefit from reduced exposure to reputational risks, as well as, a decline in the economic, social, and environmental hazards related to climate change (Köhler et al., 2019). The risk of lower profitability, limited access to capital, client loss, and reputational harm are a few examples of the major financial risks, which banks do not adapt to new sustainable finance techniques may be exposed to higher risk (Zhan & Santos-Paulino, 2021).

Sustainable businesses commit to a broad range of goals to prevent future imbalances and to offer protection from unfavourable circumstances (Godfrey et al., 2009). In this preceding situation, adoption of the sustainable development goals aligns the interest of all the stakeholders; however, it can restrict the business policy by increasing the operational cost and by exposing the firms towards a major risk factor. SDGs demand more work today in exchange of more opportunities and long-term survival in the future. As the implementation of SDGs require heavy investment; therefore, it was argued that if too much is invested in these SDGs, firms particularly banks can lose their financial strength, which may increase their risk (Cernev & Fenner, 2020). The implementation of SDGs is inclined to smooth the interest of all the stakeholders The adoption of SDGs requires banks to change their policies, which can introduce risk in the form of increased fund outflows, therefore the implementation of SDGs is not as simple as it may seem. UN's SDGs initiative demands more work now in exchange for fewer dangers and more opportunities in the future. Ignorance of SDGs by the business can cause the risk of losing capital adequacy and financial strength in the long-term (Gramlich & Finster, 2013). Previous studies have mostly focused on how to combine strictly commercial, shareholder-driven management practices with a broader set of ethical

standards intended for all stakeholders. Many studies proved that social behavior leads towards the value creation of firms. The relationship between risk and sustainability is analyzed from two point of views. One is that adoption of the sustainability practice provides insurance like protection, which creates long-term survival for all stakeholders rather than just value creation for shareholders. Second view is that sticking to the economic, social, and environmental standards is the tool of mitigating the risk factor (Guenster et al., 2011).

UN principles for responsible investment requires to highlight the impact of sustainable practices on the credit risk of the firms. This impact has clearly identified several issues pertaining to the relationship between risk and sustainability practices. Although, the first risk has been identified as an important factor in adopting the sustainability practices but the risk measurement is very narrow. The sustainability practices are not yet linked to the market risk of the firms. Rather they are just linked to the credit risk of the banks (Razak et al., 2020). Secondly, there is a difference between the SDGs and profitability of banks and SDGs and risk of the banks. Therefore, to measuring the importance of SDGs from profitability perspective, SDGs must be measured from the risk perspective.

This research aims to fill the gap and finds the impact of adoption of sustainable development goals on the risk of the banks in the following ways. Firstly, this study finds the overall impact of adoption of SDGs on the risk of the banks. Secondly, this study finds the separate impact of economic, social, and environmental indicators of SDGs on the risk of the banks. The sustainable development goals are measured by the economic, social, and environmental indicators, which are given by the United Nations' statistical division.

Literature Review

Economic Aspect of SDGs and Risk of Banks

Economic sustainability is an important aspect of sustainable development goals. Economic sustainability includes GDP, inflation, innovation, infrastructure, and tourism. Previous studies on the relationship between economic sustainability and the risk of banks are quite limited. However, indirect effect of economic growth has been measured by Jreisat (2020) and this study found that economic growth has a positive impact on the profitability of banks, which can lead towards reduction of credit risk.

Ratnawati (2020) found that the relationship between the economic growth and z score is significant and adopting the economic developments, which can increase the financial stability and reduce the risk of banks. Increase in economic growth and foreign direct investment reduces the risk of the firms (Baliamoune-Lutz, 2004).

A study by Gopalakrishnan & Mohapatra (2020) showed that greater uncertainty shocks may cause enterprises to temporarily defer investments and employment creation, which would slow the growth of productivity. They showed the negative relationship between the risk and the economic growth of the firms. If the economic policy is not well developed and investment and employment opportunities are not planned, it may cause adverse effects on the businesses in the form of lower output (Baker et al., 2016). There is negative relationship between the uncertainty and risk of firms and the investment decisions according to a research conducted in the United States (Baum et al., 2010). Investing in the regeneration of resources is a more robust approach for long-term value preservation of a corporation and it is a fundamental requirement of economic rationality. Furthermore, it is argued that if a firm is more sustainable, it behaves more rationally from economic point of view (Becchetti, 2011).

Social Aspects of SDGs and the Risk of the Banks

As far as the financial sector is concerned, social sustainability has a prominent and significant role as indicated by previous studies. Social responsibility can increase the firm's value and decrease the risk by the moderating impact of customer satisfaction and good reputation (Luo & Bhattacharya, 2006). Social sustainable practices enhance the image of a company in the market signaling the efficient use of resources, which reduces the volatility of firm's value (Schnietz & Epstein, 2005; Greening & Turban, 2000). Social sustainability leads to improved credit rating (Jiraporn et al., 2014). Firms that adopt the social responsibility have lower idiosyncratic risk (Gramlich & Finster, 2013). Banks, which adopted various social sustainability practices can attain the social goals as well as manage their risk more efficiently (El Ghoul et al., 2011). Social sustainability is a mechanism of increasing reputation and secure financial stability and reducing risk (Scholtens & van't Klooster, 2019). A positive relationship has been found between the socially responsible banks and performance, while reducing the risk of banks (Akben-Selcuk, 2019). Social factors are very much related to systematic risk of the banks because of the

nature of banking services, their product and their nature of business. (Homer-Dixon et al., 2015).

Existing literature showed a negative relationship between the social sustainability and the default risk of banks (Bouslah et al., 2018). A study of US banks suggested that there is a significant and negative relationship between the social sustainability practices and the risk of banks, while the relationship between the social sustainability and the risk of banks in the developing countries still requires to be investigated. The social sustainability practices in the developing countries are less regularized so their impact on the risk of banks is yet to be explored (Ferrell et al., 2016; Bolton, 2013). According to stakeholder theory, satisfying all the stakeholder instead of just shareholders is the key for the firms for their long term survival (Freeman, 1984). The involvement of banks in social sustainability performance can induce the risk management practices, while satisfying different stakeholders, banks can reduce the risk exposure (Godfrey et al., 2009). Furthermore, strong relations with stakeholders can reduce market uncertainty and increase the risk avoiding capability, decreasing any interruption to firm's profitability, thus, limiting the undesirable events (Kytle & Ruggie, 2005). Several studies have found that firms benefit from being socially responsible as it reduce the total, systematic, and idiosyncratic risk (Salama et al., 2011; Jo & Na, 2012). These studies have found a negative relationship between the social responsibility and risk of the banks. Firms with low social responsibility have small shareholder base because their share prices are not market competitive (Hong & Kacperczyk, 2009).

Environmental Aspects of SDGs and the Risk of Banks

SDG no 13 demands the immediate action to combat the climate change. The Paris agreement inclusion of number of activities related to climate change and support of environmental integrity is a good component, which includes the environmental sustainability in the sustainable development goals (Kelman, 2017). The climate change action means activities to remove the climate extremes. It includes reduced floods, lessen the carbon dioxide emission and low disaster risk. (O'Brien et al., 2006). Banks must manage their risk in order to create value. If environmental concerns are not catered, it can create risk for the business firms including banks. In the light of UN's SDGs proposal, many initiatives have been taken to promote the environmental sustainability. Several firms are incorporating the

environmental protection initiative as it was evident in the United Nations United Nation's environment program and its finance initiative promotes an ongoing commitment from international investors to reducing investment risks related to climate change.

Previous studies have shown that sustainable banking practices can reduce the environmental and legal risk, which can improve the bank's performance and reputation in the market. Sustainable banking also reduces the risk by fulfilling the economic, social, and environmental obligation, banks avoid risk taking (Harjoto & Laksmana, 2018). Stock returns are higher for the firm, which are involved in environmental friendly activities (Derwall et al., 2005). Webb et al. (2012) found a significant relationship between the stock prices and climate change action firms. Environment sustainable firms better manage the price risk (Khan, 2019).

Theoretical Framework

the stakeholder theory proposed by Freeman (2004), is the main theory deployed in this study, which states that businesses should consider their actions, which may affect a variety of stakeholders by maximizing profits for shareholders. This includes taking sustainability's social, environmental, and economic facets into account. Sustainability practices entail resource management and corporate operations that support long-term social, economic, and environmental well-being. Another theory that supports the adoption of SGDs for reducing the risk is the legitimacy theory. According to this theory, organizations try to uphold a positive reputation and win the support of society by abiding social norms, values, and expectations. It contends that organizations are driven to conform their behaviours and practices to accept social norms in order to preserve their legitimacy and lower the possibility of uncertain events. This theory is also used in sustainable risk management practices (Aziz et al., 2015).

Hypothesis Development

United Nations statistical division has proposed the economic, social, and environmental indicators for the measurement of adoption of sustainable development goals. Significantly, these three aspects are related to the risk of the banks; however, a true impact of the adoption of SDGs on the risk of the banks is yet still to be explored. This study fills this gap by finding the combine effect of SDGs and separate impact of economic,

social, and environmental indicators on the risk of the banks. Based on the above literature hypotheses are specified, which are as follows:

H_1: Adoption of sustainable development goals significantly affect the risk of banks.

H_2: Economic indicators of sustainable development goals significantly affect the risk of the banks.

H_3: Social indicators of sustainable development goals significantly affect the risk of the banks.

H_4: Environmental indicators of sustainable development goals significantly affect the risk of the banks.

Data and Methodology

Sample

The population of this study is the banking industry and the sample includes banks from nine countries of Asia Pacific Region. Banks are selected from the Asian banker database in which banks are declared as the strongest banks. Data is collected from the annual reports of the banks. Five banks were selected from each country and data was collected from 2017-2022 as SDGs were proposed in 2015 and started to be implemented from next year. Banks have successfully declared the adoption of sustainable development goals either in their annual reports or in separate sustainability report.

Definition of Variables

ESE Index

The adoption of sustainable development goals is measured by the ESE index. The 21 indicators of the sustainable development goals (SDGs) are used to create the ESE index. Seven among twenty-one indicators are related to the economic pillar of the SDGs, the other seven are related to the social and the remaining seven are related to the environmental pillar of SDGs. The global indicator framework, which consists of 248 indicators, was developed by the Inter-agency and expert group on SDG indicators (IAEG-SDGs). Indicators, which are related to the banking industry have only been selected for this study. Adoption of indicators is disclosed by the banks either directly in their annual reports or in the separate sustainability reports. A score out of 21 was given to the banks for the adoption of the

SDGs. If a particular indicator is adopted by the banks a score of 1 is given otherwise a zero score is given, accordingly.

Dependent Variable

R is the risk of banks, which is a dependent variable.This study focus on the impact of adoption of sustainable development goals on the systematic risk of the banks. This is crucial because the accumulation of systemic risks frequently cause immense financial crises, which are expensive and can cause severe defaults and effect the profitability of a firm (Altunbas et al., 2017). Therefore, in this study bank risk is calculated by *z* score. A high *z* score indicates a greater stability (low probability of default), which can be viewed as a measure of a company's capacity to endure high pressure. Several studies have utilized *z* score as a measure of risk of banks (Lapteacru, 2016; Pradhan, 2014). This *z* score is calculated as the standard deviation of return on equity as explained in the previous study of Barry et al. (2011).

Independent Variable

ESE index is the independent variable. As this index is proxy for the adoption of SDGs, this model analyses the impact of ESE index on the risk of the banks.

Moderator Variable

A moderator variable is used in the model, which is ESEBS. Its value is calculated by multiplying bank size with ESE index. It shows that bank size effects SDGs and the risk of the bank. Large banks have more diversified portfolio, which are more effected by the adoption of SDGs, which put them into risky position. Large banks may have more options to achieve from SDGs including enhanced reputation, decreased risk, and more access to finance but having a large stakeholder base expose them to criticism on diverting their assets towards sustainable practices. Larger banks being more risk-averse are more willing to adopt the SDGs, which can reduce the financial risk (Balasubramanian et al., 2021; Younis & Sundarakani, 2020). Bank size is proven and important determinant of risk of banks (Casu et al., 2016). For the separate analysis of economic, social and environmental indicators, their moderators have been defined, such as, EcoBS, SocBs, and EnvBS. They are defined by multiplying economic, social, and environmental indicators with bank size respectively.

Control Variables

Capital ratio (CR), Nonperforming loans (NPL), and Bank size (BS) are the control variables as used in previous studies (Shakil et al., 2019; Avrampou et al., 2019). Details of variables is given in Table 1.

Table1
Details of Variables

Variable	Type	Explanation
Risk (R)	Dependent	Bank risk is calculated by z-score.
ESE index	Independent	ESE index is constructed by the economic, social and environmental indicators of SDGs
ESEBS	Independent	ESEBS is the variable in which ESE index in multiplied by Bank size.
Capital Ratio (CR)	Control	Capital Ratio is used as control variable.
Non-performing loans (NPL)	Control	NPL is also used as control variable.
Bank Size (BS)	Control	Bank size is also used al control variable.

Empirical Framework

Previous studies have analyzed the relationship between the financial performance and the risk of the banks in several ways. Bank's risk is dependent on the financial performance of the banks and banks having good performance are in the position to take extra risk (Moudud-Ul-Huq et al., 2020). Extra risk pressurizes the banks to take measures for long-term sustainability or for the adoption of sustainable practices. Sometimes not taking the long-term view can put the banks in a highly risky situation. Bank's adoption towards sustainable practices is also associated with the size of the bank. Numerous studies have found that banks, which diversify their assets and are large in terms of asset, are likely to control their risk. The larger the size of the bank, the better it would be to control the risk (Casu et al., 2016). Following are the empirical models to analyze the relationship between the adoption of SDGs and the risk of the banks:

$$R_{i,n}=\alpha+\beta1(ESE)_{i,n}+\beta2(ESEBS)_{i,n}+\beta3(CR)_{i,n}+\beta4(NPL)_{i,n}+\beta5(BS)_{i,n}+e_{i,n}$$

$$R_{i,n}=\alpha+\beta1(Economic)_{i,n}+\beta2(EcoBS)_{i,n}+\beta3(CR)_{i,n}+\beta4(NPL)_{i,n}+\beta5(BS)_{i,n}+e_{i,n}$$

$$R_{i,n}=\alpha+\beta1(Social)_{i,n}+\beta2(SocBS)_{i,n}+\beta3(CR)_{i,n}+\beta4(NPL)_{i,n}+\beta5(BS)_{i,n}+e_{i,n}$$

$$R_{i,n}=\alpha+\beta1(Environmental)_{i,n}+\beta2(EnvBS)_{i,n}+\beta3(CR)_{i,n}+\beta4(NPL)_{i,n}+\beta5(BS)_{i,n}+e_{i,n}$$

Empirical Findings

Descriptive Statistics

The data set obtained as a sample size was summarized using descriptive statistics. It provided data on average value deviations and the central tendency. The values of mean and standard deviation are shown in Table 2 below. The descriptive statistics show satisfactory values.

Table 2

Descriptive Statistics

Variable	Mean	Standard Deviation	Min	Max
z-Score	-0.001199	1.001669	-8.401	1.59
ESE	11.08	4.26	0	20
ESEBS	159.43	79.45	-0.36	338.3
CR	14.96	6.12	-6.5	31.04
NPL	3.08	3.67	-.8	18.2
Bank Size	14.42	4.82	1.33	26.59

The value of ESE depends on disclosure of economic, social, and environmental indicators of SGDs. ESEBS is a moderator, which is ESE index multiplied by bank size. Z-Score represents bank's risk; CR is the capital ratio; NPL is non-performing loan ratio, and bank size is the logarithm of total assets.

Regression Diagnostics

The results of regression are shown in the Table 2. This table indicates the impact of ESE index, which is the proxy for the adoption of sustainable development goals on the risk of the banks. ESE is regressed with Z-score. The regression output shows that the model is fit and risk of the banks is negatively and significantly related to the adoption of SDGs. This shows that banks, which have already adopted the UN's SDGs, can mitigate their risk in future. Therefore, by using the moderator ESEBS, it was found that ESEBS was positively and significantly associated to risk of the banks, which means as the size increases, the adoption of SDGs would put banks into risky situations. The adoption of SDGs mitigates the risk of the banks

but it is more effective for the banks possessing a normal size. As the size would increase, the risky position of the bank would increase.

Table 3

Effect of Overall ESE Index on the Risk of Banks

Variables	Coefficients
ESE	-0.097***
ESEBS	0.007***
CR	0.069***
NPL	-0.008
Bank Size	-0.079***
No of Obs	270
Prob>*F*	0.0000
R^2	0.2165

Note. *** Correlation is significant at 0.01 level.

Generalized Method of Moments

Regression analysis is conducted to see the fitness of the model. The main statistical technique for analyzing the data is GMM (generalized method of moments). GMM is a usually highly preferred model over regression analysis, as it covers the endogeneity problem along with the omitted variable. GMM is more robust and higher to give highly efficient results of the analysis. Two-step GMM system is preferred over the one-step GMM system. The results of the analysis are as follows.

Impact of Overall ESE Index on the Risk of Banks

Table 4

Effect of Overall ESE Index on the Risk of Banks

Variables	Coefficients
z-score Ll.	0.975***
ESE	-0.002***
ESEBS	0.0003***
CR	0.001***
NPL	-0.0003***
BankSize	-0.004***
Prob> χ^2	0.000
No of obs	224
No of Instruments	57

Variables	Coefficients
No of Banks	45
Sargan Test(*p*-value)	0.06
Arellano-Bond test AR (2) (*p*-value)	0.307

Note. *** Correlation is significant at 0.001 level.

Table 4 represents the impact of ESE index on the risk of the banks. ESEBS is used as a moderator to check the impact of ESE on the risk of the banks in relation to the banks. Noticeably, the results are positive and significant, which shows that small banks can exploit the positive effect of adoption of SDGs but large banks have to face the negative impact of ESE on the risk of banks. the small banks with limited resources can align their business practices with sustainable development goals easily because of limited stakeholders. On the other hand, large banks having more complex and global operations may face challenges in adoption of SDGs and can be subjected to greater scrutiny as perceived by their stakeholders regarding the sustainable practices. Moreover, large banks are more exposed to reputational risk due to their high visibility in the financial sector. Large banks financing an environmentally harmful project loses its customer base and investors. However, it is important to note that impact of SGDs on the bank's risk depends primarily on several other factors such as, type of stakeholders and business models.

Impact of Economic, Social, and Environmental Indicators of SDGs on the Risk of Banks

Table 5

Effect of Economic Indicators on the Risk of Banks

Variables	Coefficients
z-score Ll.	1.032***
Eco	0.035***
EcoBS	0.0002***
CR	0.015***
NPL	0.01***
BankSize	-0.002
Prob> χ^2	0.000
No of obs	224
No of Instruments	57
No of Banks	45

Variables	Coefficients
Sargan Test(*p*-value)	0.05
Arellano-Bond test AR (2) (*p*-value)	0.336

Note. *** Correlation is significant at 0.001 level.

Table 6

Effect of Social Indicators on the Risk of Banks

Variables	Coefficients
z-score Ll.	1.039***
Soc	-0.008***
SocBS	-0.0003***
CR	0.014***
NPL	0.016***
BankSize	0.0123***
Prob> χ^2	0.000
No of obs	224
No of Instruments	57
No of Banks	45
Sargan Test(*p*-value)	0.05
Arellano-Bond test AR (2) (*p*-value)	0.334

Note. *** Correlation is significant at 0.001 level.

Table 7

Effect of Environmental indicators on the risk of banks

Variables	Coefficients
z-score Ll.	1.057***
Env	0.003**
EnvBS	-0.0004***
CR	0.0127***
NPL	0.016***
BankSize	0.009***
Prob> χ^2	0.000
No of obs	224
No of Instruments	57
No of Banks	45
Sargan Test (*p*-value)	0.05
Arellano-Bond test AR (2) (*p*-value)	0.334

Note. *** Correlation is significant at 0.001 level. ** significant at 0.05.

Interpretation of Empirical analysis

Table 5, 6, and 7 show the impact of separate indicators and results of SDGs on the risk of banks. These indicators are taken from UN's statistical division known as inter-agency and expert group on SDG indicators, which proposed the global indicator framework. The results of GMM showed that economic indicators of SDGs significantly and positively affect the risk of banks. These results were unanimous with many previous studies (Gopalakrishnan & Mohapatra, 2020). As indicated in previous literature if banks focus only on the economic benefits and do not adopt sustainable development goals.

It means adopting the economic sustainability only as a sustainable practice and ignoring the social and environmental sustainability would significantly increase the reputational risk. Hence, by just focusing on the economic gains and ignoring the rest of the stakeholders could cause social unrest, which may leads toward business setbacks and emanate costs (Fastenrath et al., 2018). Moreover, the moderator variable ECOBS is also positively linked to the risk of the banks, which shows that as the bank size increases, risk of the banks would also increase, if the banks only focus on economic gains and do not adopt sustainable development goals (SDGs). The result was consistent with our hypothesis of using small banks as a moderator, which are less risky as far as the adoption of SDGs is concerned. On contrary, bigger banks may be more exposed to specific industries or types of assets, which makes them more susceptible to market fluctuations or systemic risks (Acharya & Richardson, 2009). These banks have complex business models, which are more prone to economic shocks. On the other hand, smaller banks are more likely to adapt SDGs and better equipped towards market developments because their business models are simple and less complex. Moreover, they might have a stronger regional focus, which can reduce their susceptibility towards systemic risk (Hagendorff et al., 2013).

Table 6 shows the impact of social indicators of SDGs and risk of banks. The relationship is significantly negative. Banks adopting the social indicators of SDGs are less likely to face operational, regularity, and reputational concerns. Due to this fact, social sustainability mainly involves a bank's capacity to conduct business in a morally upright and accountable manner, which satisfies all the stakeholders. Fulfilling the social responsibility could reduce the risk of bank, which is also indicated in

many previous studies (Wu & Shen, 2013; Greening & Turban, 2000). Expectedly, the adoption of social sustainability methods can provide more long-term advantages than the short-term hazards. Businesses, which have successfully adopted social sustainability strategies have also gained a competitive edge to strengthen their resistance towards the upcoming risks, like changes in rules or stakeholder expectations (Schaltegger et al., 2012). The moderator variable ScoBS is also negatively related to the risk of banks, which shows that the more social indicators of SDGs are adopted the risk of banks is likely to reduce consequently increasing the banks size. Bigger banks adopting the social indicators also become less risky as these banks build strong relationship with all stakeholders groups. Moreover, social sustainability can assist large businesses in developing resilience and adaptation regarding social sustainability. These businesses can reduce their reliance on short-term revenues and put long-term stability and sustainability by using strategies, which encourage sustainability practices and long-term thinking (Perrini et al., 2007).

Table 7 shows the separate analysis of environmental indicators of SDGs and the risk of the banks. The results show that adopting only the environmental indicators can not reduce the risk of the banks./The findings of this study indicate a strong and positive correlation between the environmental indicators of Sustainable Development Goals (SDGs) and the risk level associated with banks. Environmental sustainability practices are occasionally expensive for the banks. Therefore, installing sustainable energy sources can demand a sizable cost. A corporation may disregard the economic component, causing financial strain and even insolvency, if it simply concentrates on the environmental sustainability (Bansal, 2005). Focusing solely on the environmental sustainability can ignore the social aspects of SDGs, which can dissatisfy the stakeholders and employees. It also requires the policy makers to engage the budget in reforming the environmental destructions resulting in the increased transportation and energy bills, while ignoring the economic and social sustainability (Ekins & Zenghelis, 2021). Hence, if a business exclusively focuses on the environmental sustainability, it might not fully meet market demands. Access to markets where environmental friendly products are required, but cost effectiveness and social responsibility are important factors that requires to take into account the economic and social sustainability which may increase the risk of banks in long-term (Schneider et al., 2010). Moreover, as the size of the banks increase, environmental indicators may

reduce the risk of the banks in large banks. Previous literature has significantly indicated the adoption of environmentally sustainable practices, such as reduced energy usage, clean environment, and recycling reduce operational cost. As the operational cost is high in large banks, they can minimize their cost by taking the environmental friendly practices, resultantly by reducing the risk of banks (Benlemlih et al., 2018). Large banks are exposed to a large number of risks. By the adoption of environmental sustainability, large banks diversify their risk profile, which may mitigate the risk factor (Biswas, 2011).

Discussion and Future Implication

This study analyzed the impact of adoption of SDGs on the risk of the banks. Several prior studies have focused on the sustainability and the financial performance of the banks; however, these sustainability practices were not linked to the risk of the banks. After the proposal of United Nation's sustainable development goals, there is a dire need to analyze these SDGs in business incorporation and their risk factor. Consequently, this study filled this gap by analyzing the adoption of SDGs along with the risk of banks. The results of two-step GMM system showed that SDGs were negatively related to the risk of the banks. As the banks adopted these SDGs, they increased their long-term survival by focusing on certain mediating factors, such as, the GDP growth, innovation, poverty alleviation, education investment, health financing, clean environment, CO2 emissions.

The important finding is that SDGs is the wholesome agenda in which banks should not ignore one dimension and focus on another. Rather focusing on all the three dimensions leads towards the risk reduction. /Moreover this study highlighted the significance of acknowledging and addressing all dimensions of sustainable development goals instead of disregarding one in favor of the other. As the results indicated all three dimensions, namely, economic, social, and environmental factors are focused, which may reduce the overall risk as well. However, the focusing in the one dimension and ignoring the other can increase the risk. The motive of these SDGs is to completely adopt the sustainability practices.

Conclusion

This study identified that adopting sustainable practices is crucial for banks if they want to reduce their risk in the long-run. The financial performance and reputation of banks, especially those in emerging nations,

can be significantly impacted by environmental and social concerns. Banks can lessen their exposure to these hazards, cut operational expenses, improve their reputation, and adhere to regulatory requirements by adopting sustainable development goals (SDGs). Including sustainability into risk management plans can also help banks to diversify their risk exposures and guarantee long-term profitability. Banks, which prioritize SDGs, would be better positioned to manage risks and take advantage of possibilities throughout the shift towards a more sustainable economy, as pressure mounts on the financial sector to address social and environmental issues.

Hence, by prioritizing SDGs would significantly enable banks to better manage risks, build their brand, adhere to regulations, access funding, and seize new business possibilities. Banks may aid in the shift to a more sustainable economy, while also ensuring their long-term viability and profitability by integrating sustainable development into their business plans as a sustainable practice.

Implications

To effectively prioritize the Sustainable Development Goals (SDGs), it is imperative to possess a comprehensive understanding of the economic, social, and environmental aspects involved. For this purpose, managers must evaluate the risks, which could result from unsustainable practices and must give priority to investments that support the SDGs. Managers can make better judgements and lower their exposure to high-risk activities, which are connected to climate change, resource depletion, or social conflicts by including ESG elements into risk assessments. Adoption of SDGs may help shareholders to create a long-term value. Through this, risks may be decreased, reputation can be improved, socially conscious clients can be drawn in, and new market and funding can be accessed by adopting the United Nation's SDGs. Managers can put the bank in a position of reducing risk and long-term success, while also making a contribution towards a more sustainable economy by adopting SDGs. This is also the implication for managers, investors, and stakeholders that overall implementation of SDGs mitigates the risk business. The focus of these stakeholders should be on all the related indicators of sustainable development goals (SDGs). Another finding is that these SDGs reduces the risk of banks with small size; however, as the size of the bank increases their risk also increases. This gives an important implication that small banks can exploit the opportunity of SDGs to remain sustainable in the long-

run. Large banks, which have already faced so many risks, can further increase their risk by the adoption of SDGs. It means large banks must check their risk profiles before the adoption of SDGs, which mitigate their already incurred risk to remain sustainable in the long-run. Larger banks are more susceptible to economic and systemic risks even though they may have some advantages like economies of scale and greater resource availability. These risks can be exaggerated by focusing on the short-term benefits, which put profits ahead of the long-term sustainability and stability. Banks must take the holistic approach in order to remain sustainable and reduce the overall risk.

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