Green Financing and Sustainable Policy for Low Carbon and Energy Saving Initiatives: Turning Educational Institutes of China into Green

Muhammad Talha

Department of Computer Science, Superior University Lahore, Pakistan
E-mail. talhashoaibt@yahoo.com

To achieve a zero-carbon agenda, businesses in emerging economies need to focus on green production resources to develop a circular economy. This study identified the key role of green financing in mobilizing pro-environmental behaviours for achieving sustainable production and a circular economy. The study aimed to study the effect of green financing on the pro-environmental behaviours of educational institutes within China. A quantitative methodology was adopted, and structured questionnaires were used for the collection of data from educational sector employees. The data was collected from both administrators and teachers with random sampling technique and was later analyzed through SEM. The results showed that green financing aids institutions in the implementation of pro-environmental behaviours and also sustainable policy development was found to mediate the association between low carbon management, carbon asset transactions, and energy saving and emission reduction technologies and green financing. This study makes valuable contributions to the literature on green financing, sustainable development, and pr-environmental behaviours. The findings can help the education sector to adopt sustainable practices. It may also contribute to helping policymakers develop policies related to pro-environmental behaviours. Furthermore, the paper explores the green financial aspect of educational institutes, making it a valuable resource for both theory and practice.

Keywords: *Green Financing; Carbon Asset Transactions; Low Carbon Management; Green Technologies; Educational Institutions.*

Introduction

Many nations, including China, have endorsed the Sustainable Development Goals (SDGs) Declaration. A worldwide action plan known as the SDGs aims to safeguard the environment, alleviate poverty, and minimize inequality. The 17 Goals and 169 Targets in the SDGs are meant to be accomplished by 2030 (Assembly, 2020; Malla & Brewin, 2020). Sustainable development is one of the essential ideas of the second part of the 20th century, and it is a holistic model by the UN (Dallago & Rosefielde, 2019; Marin, 2020; Ozigci, 2020; Warju & Soenarto, 2017). The education sector in China is vital for the country's development and economic growth. China has made significant improvements in the education sector. Educational institutes play a substantial role in achieving sustainable development in the country (Aymerich & Herce, 2020; Dewi, Rahmatunnisa, Sumaryana & Kristiadi, 2018; Gou, Xu & Zhou, 2021; Qin, Wang, Xu & Skare, 2021). Although SD Goal 4 (ensuring inclusive and equitable high-quality education and fostering lifelong learning to offer opportunities for everyone) is directly tied to the education system, all other SD Goals indirectly refer to the education sector (Fanea-Ivanovici & Baber, 2021; Pilinkiene, Stundziene, Stankevicius & Grybauskas, 2021; Shulla, Filho, Lardjane, Sommer & Borgemeister, 2020; Stump, 2021).

Sustainable development is the working of organizations in the way that is an appropriate to get better results in future (D. Zhang, Mohsin, Rasheed, Chang, & Taghizadeh-Hesary, 2021). Sustainability in environment demands the protection of the environment for a long term (Hemanand *et al.,* 2022). Furthermore, green financing refers to the new and innovative ways of financing that are critical for development of sustainability in the organization (Azhgaliyeva, Kapoor & Liu, 2020). Low carbon management refers to the goals that are established by the management for sustainability of the environment by reducing the emission of carbon by the industrial sector (Ionescu, 2021).

Paper waste generated by China's education sector uses a lot of energy and water, which increases air pollution and waste issues (Agussani & Akrim, 2020; Chilimba, Dunga & Mafini, 2020; Ghosh, 2022). There is a requirement that staff or faculty in China's educational sectors be encouraged to discourage using non-recyclable materials like paper or plastic packaging (Ismail, Wiropranoto, Takama, Lieu & Virla, 2021). Humans are compelled by growing environmental concerns to adopt more environmentally friendly lifestyles, including green infrastructures. It integrates non-toxic, recyclable products, efficient use of energy and water, use of renewable energy, pollution and waste-reduction strategies, and positive indoor environmental air (Council, 2021). If implemented in educational institutes, these initiatives can benefit both the environment and learners' health (Badell, Claver, Brufau, Ensenyat & Torrents, 2020; Carolina-Paludo *et al.,* 2020; Gavurova, Belas, Valaskova, Rigelsky & Ivankova, 2021; Schools, 2018) while promoting ecological awareness and education. The eco-friendly institution program in China aims to provide the tools to the schools they need to become role models for sustainability in their neighborhoods.

Students eventually get the capacity to take the initiative and deepen their involvement in sustainability efforts. Sustainability development also contributes toward energy efficiency and low carbon management (Caliskan & Zhu 2020; Giaretta & Chesini, 2021; Gough, Lee & Tsang, 2020; Sigurdsson *et al.,* 2021).

In China, Article 28h of the Constitution of the Republic of China of 1945 mandated that every Chinese person has a fundamental right to a healthy and pleasant living environment (H. Naeem & Inam, 2021). As a result, Law Number 32 of 2009 on the Protection and Environmental Management has mandated that measures must be made to fulfil the purpose (No). Owing to this law, the Ministry of Environment and Ministry of education have decided to implement green strategies in the educational sector to promote sustainable development. Scholars in the Chinese university context established the idea of sustainability and the thought of applying it to organizations. According to (Adiguzel, 2021; Girgin, 2020; Lozano, Lukman, Lozano, Huisingh & Lambrechts, 2013; Muller, 2020), internal stakeholders of the institutions, such as university administrators and personnel, have a crucial role to play in putting sustainability ideas into practice there. The use of sustainable development strategies in the future can be broadened beyond higher education institutions and university administrators. The term green school is Sekolah Adiwiyata in China (Adiwiyata School). People are expected to engage in initiatives that promote a healthy environment and prevent adverse environmental effects. It is founded on environmental education concepts and interactive and sustainable ideals. Only specific schools that have satisfied the requirements can get the Adiwiyata award. Only 376 public and 58 private schools in China had received the Adiwiyata award at the national level as of 2019 (KLHK, 2019; Mamghaderi, Khamooshi & Kwak, 2022; Nagy, 2021; Ulutas, Popovic, Radanov, Stanujkic & Karabasevic, 2021). It suggests that many more schools still don't meet this benchmark. Sustainability development in educational institutes can be achieved by promoting green financing, and it may lead to cleaner environment measures like low carbon and natural light utilization (Boni, 2022).

Most of the sustainable development initiatives which lead to pro-environmental behaviour are driven by finance. But financing institutes are more interested in fossil fuel projects than green initiatives as they pose a risk and offer a lower return rate. To scale up the financial support of assets that favor the environment, we must create a new file for green projects and adopt new financial and policy measures, such as green bonds, green banks, carbon trading instruments, tax policy, green monetary systems, financial innovations, green society funds, etc., which are from now on known to as "green finance.". (Sachs, Woo, Yoshino & Taghizadeh-Hesary, 2019). Recently, green finance has been helping low-carbon industries by providing minimal interest rates, which has led to the growth of the carbon sector (Chen & Chen, 2021) (Jambulingam, 2018). The green credit policy greatly helps emission reduction and energy saving (Huang & Zhang, 2021). Green financing aims to reduce investment in organizations having high pollution activities, in this way compelling them to energy saving and emission reduction technologies (Liu, Xia, Fan, Lin & Wu, 2017). As the Chinese government is trying to

create a sustainable environment and reduce emissions, carbon assets transaction is another move towards this goal. Carbon trading is the purchase and sale of credits that allow a business or other organization to emit a specific amount of carbon dioxide or other greenhouse gases (Mat Jusoh *et al.*, 2022). Governments have approved the carbon trade and credits to gradually reduce overall carbon emissions and lessen their impact on climate change. According to Reuters, China has implemented new regulations on carbon transactions to create a market system to aid in achieving the nation's greenhouse gas reduction goals by 2030. The law stated that this will serve as Jakarta's road map for achieving its commitment to cut emission levels by 29 % below business as usual in 2030 through independent efforts or up to 41 % with international assistance in financing and technology (Reuters, 2021; Boni, 2020).

Rising environmental issues affecting students' health are also compelling scholars to do extensive research on sustainable development in the educational sector. Due to the epidemic, worries for healthy air circulation have risen. Climate change and continuous ecological pollution also put additional strain on buildings, particularly schools, to design more sustainably and environmentally. These can be quantified as low-carbon and resource-efficient (Lestari, La Fua, & Wahyuni, 2022). Institutions must implement sustainability strategies but lack the resources for novel green initiatives. Hence, there is an urgency to come up with some solutions so that improvements can be made for students' well-being and the pressure on academic institutes (York, Pradhan, Luo, & Toscani, 2022). There is a good amount of literature on green technologies and creating sustainable development, but there is a lack of extensive research on sustainable development in the education sector. In addition, most of the studies are being done in developed countries. Although the green school concept has been studied and implemented in China (Anggraini & Karyanto, 2018; Gough *et al.,* 2020a; Lestari *et al.,* 2022), fewer schools are implementing this concept. There is also a scarcity of research on how green financing helps to achieve pro-environmental behaviour on asset transactions, energy saving and emission reduction technologies and low carbon management (Jambulingam, 2018). Therefore, our study intends to study green financing and sustainable policy for low carbon and energy saving initiatives by studying these relationships and examining the mediating role of sustainable development in the education sector of China. Meanwhile, the existing studies in the body of literature reported that the educational institutes are large in numbers in China, and if these institutes should be shifted to the way of sustainability, the environmental degradation would be decreased (Ionescu, 2021). Also, the researchers highlighted that the environmental degradation can become easy to achieve when each sector of the country is contributing equally in it (Irfan, Razzaq, Sharif & Yang, 2022). Therefore, the Chinese educational institutes are large in numbers, and must be considered for environmental protection.

The current study is thus aimed at empirically investigating these relationships and aims to achieve the following research objectives

- To examine the impact of green financing on Low Carbon Management.
- To observe the impact of green financing on Carbon Asset Transaction.
- To observe the impact of green financing on Energy saving and Emission Reduction Technology.
- To analyze the mediating impact of sustainable development on the relation of green financing with low carbon management, carbon asset transaction and energy saving and emission reduction technology.

This study is relevant for creating awareness in public, academic institutes and students about environmental problems and their solutions. Environmental education is attaining attention in China, but still, this practice is not shared. The government is focusing on green school initiatives to achieve sustainable development in the country (Dat, Dai & Ngoc, 2022). Yet, the education sector and the institutes need much more to do in this regard. This study aims to analyze green financing in achieving sustainable development in the Chinese educational sector by combining all the essential and emerging components into a unified framework by evaluating prior literature (Watrous & Levine, 2020).

Literature Review

Natural Resource Based View (NRBV) Theory

The Natural Resource-Based View (NRBV) Theory was developed by (Hart, 1995). He argued that positive resources and associated capabilities should form the basis of getting a competitive advantage by performing different activities related to the business in such a way that those activities are valuable for the surrounding environment. This theory was developed by (Hart, 1995) based on the hypothesis that firms can get stimulated to adopt innovation and develop new technologies and strategies for gaining a competitive advantage according to environmental regulations (Miemczyk, Howard & Johnsen, 2016). According to the concept of Natural Resource-Based View (NRBV) theory, it has been proposed that different abilities, including prevention of pollution, product management, and sustainable development, can result in providing a competitive advantage to the stakeholders based on the competition with other competitors in the market by reducing the costs (Anthony Jr, 2019; Farrukh, Mathrani & Sajjad, 2021) (Boni, 2020). The Natural Resource-Based View (NRBV) theory has been formulated from the Resource-Based View (RBV) theory which emphasizes that the behaviours of learning organizations, changing, adapting, and developing their abilities and resources for fulfilling the needs according to the changing conditions of the environment can help businesses in gaining the desired outcomes and competitiveness in the market (Makhloufi, Laghouag, Meirun & Belaid, 2022; Rousseau, 2017). Therefore, the philosophical approach of the Natural Resource-Based View (NRBV) theory is based on the Resource-Based View (RBV) theory which considers the firms to be a collection of creative and unique ideas based on innovation and sustainable development (Anthony Jr,

2019; Rousseau, 2017). According to NRBV theory, firms' competitiveness can get created with the help of unique resources available to the firm. Such resources might include all the assets, characteristics, expertise etc (Anthony Jr, 2019). All these resources collectively contribute to enabling the organizations to conceive and implement such strategies, which can help them improve their efficiency with the help of which all business processes can get accomplished efficiently (Miemczyk *et al.,* 2016) (Boni, 2020). It also guides the organizations and assists them in understanding those techniques which can be employed for utilizing the available resources in the best possible way and employing the advanced technologies for improving their business processes (Rousseau, 2017). The Natural Resource-Based View (NRBV) Theory has dramatically emphasized the aspect of the environment. It states that organizations can gain a competitive advantage if they develop a good association with the natural environment, which can help them ensure their economic development (Farrukh *et al.,* 2021; Makhloufi *et al.,* 2022). For this purpose, the organizations should explore green resources, which can have positive outcomes in terms of the surrounding environment which can make them unable to thrive better in the long term by reducing the emissions and, ultimately, the costs associated with different operational activities of organizational businesses (Miemczyk et al., 2016). In this way, the organizations can be made capable of contributing to protecting the environment (Hart, 1995). Based on the concepts and elaborations of the Natural Resource-Based View (NRBV) Theory, the importance of green financing for ensuring the adoption of low carbon management, carbon asset transaction, and energy saving and emission reduction technologies in educational institutions. These concepts have been discussed below, along with the importance of mediating the role played by sustainable development in this regard.

Green Financing and Low Carbon Management

Green financing is vital for integrating low-carbon management practices in educational institutes. The environmental strategies adopted by different institutes depend on the external pressures from the stakeholders to persuade them to implement proactive environmental strategies (Sartzetakis, 2021). This research is conducted on the primary data that is appropriate for the studies of social sciences to validate the findings. Similarly, the educational sector is encouraged to establish and implement the rules and regulations for low carbon management, which requires that the institutes generate a report containing all the information related to their carbon emissions according to the set guidelines in the institutional policies (Lee, Hashim, Ho, Van Fan & Klemes, 2017; Taghizadeh-Hesary & Yoshino, 2020). Regular monitoring of carbon emissions by the educational institutes helps them allocate resources for managing the overall system to ensure low carbon. It will help them reduce the environmental effects, which can assist the educational institutes in gaining a competitive advantage, and their financial performance can improve (Owen, Brennan & Lyon, 2018; Taghizadeh-Hesary & Yoshino, 2020). These studies also collected the data from the respondents for the appropriate findings of the research.

Green financing helps manage the low carbon system by persuading investors to realize the importance of the environment and natural resources. It is because the stakeholders will not invest in those institutions where low carbon management systems are not being implemented. Therefore, green financing is significantly related to implementing a low-carbon management system (Campiglio, 2016; Luo *et al.*, 2021; Owen *et al.,* 2018). The green financing is changing the traditional ways of financing because with the help of green financing, the appropriate actions can be taken to protect the environment (Irfan *et al.,* 2022). The green financing is an emerging concept that is widely implemented in Denmark because of its validity and sustainability (Taghizadeh-Hesary & Yoshino, 2020).

H1: There is a significant and positive relationship between Green Financing and Low Carbon Management.

Green Financing and Carbon Asset Transaction

One of the main aspects of green financing by educational institutes is crucial for them to ensure carbon asset transactions (Nassiry, 2019). The behaviours of educational institutions are mainly based on economic terms for maximum profit. It involves the adoption of different alternate mechanisms by which the costs can get reduced to the lowest possible level (M. A. Naeem & Karim, 2021). Similarly, this research is based on the primary data that is collected from the respondents to find the relationship between developed hypotheses. For this purpose, it is vital for the institutes to be a part of an emission trading market to achieve the set target of low costs (Dorfleitner & Braun, 2019; Hafner, Jones, Anger-Kraavi & Pohl, 2020). Usually, the institutes prefer those strategies requiring lesser prices at the initial stage rather than the improvement in their technological advancements (Hafner *et al.,* 2020). But then, such institutes have to face the consequences in the longer term concerning compliance with environmental regulations. Therefore, green strategies can help educational institutes get a higher rate of return and thus lower the risk of future investment reduction. Thus the educational sector can gain green financing from the investors by enhancing the number of green projects initiated by them, which can also aid in raising awareness among the general public (Luo *et al.,* 2021; M. Zhang, Lian, Zhao & Xia-Bauer, 2020) (Watrous & Levine, 2020). Green financing in the advanced and developed countries has changed the traditional patterns of working because it is environment friendly (Polzin & Sanders, 2020). Furthermore, the financing in the green projects saves the environment from usual degradation (Taghizadeh-Hesary & Yoshino, 2020).

H2: There is a significant and positive relationship between Green Financing and Carbon Asset Transactions.

Green Financing and Energy Saving and Emission Reduction Technology

One of the core strategies that educational institutes can adopt is to control emissions by reducing those practices which result in the emission of harmful substances into the environment (Cai *et al.,* 2019; Luo *et al.,* 2021). The

institutes can reduce emissions by introducing such strategies through which energy can get saved ultimately. It will help improve the overall performance of the institutions, which will help them gain green financing from the investors as the stakeholders are getting more interested in making investments for such projects based on emission reductions and energy savings (Li & Lin, 2016). Therefore, the institutions that lack to achieve energy saving and emission reduction standards cannot attract investors (An, Yu, Li & Wei, 2018). The emission reduction technologies help impose stringent limits on the emissions of harmful substances into the environment, which can lead institutions to lower their overall emissions. In this way, innovative and green practices can help the education sector achieve energy-saving targets with the help of implementing emission reduction technologies in different institutions (He, Zhang, Zhong, Wang & Wang, 2019). Green financing is considered as the reliable way for developing the new resource by avoiding the traditional natural resources (D. Zhang *et al.,* 2021). The business world is also changed with the help of green financing (Ionescu, 2021).

H3: There is a significant and positive relationship between Green Financing and Energy Saving and Emission Reduction Technology.

Mediating Role of Sustainable Development

Green Financing is a strategy for including the financial aspects in the transformation towards efficient resources and leading to low carbon emissions (Sartzetakis, 2021). The educational sectors can undertake this strategy to ensure sustainable development, as green financing has several benefits. It encourages the adoption of technological strategies for enhancing the infrastructure based on green techniques, which can help achieve a competitive advantage for improving economic prospects (Lee *et al.,* 2017). This research is also based on the primary data. Green financing helps enhance the capabilities of institutions for creating sustainable possessions through which pollution in the environment can get reduced, and the utilization of green strategies can get promoted by educating the people through which they can be made aware of the importance of low carbon management systems (Campiglio, 2016; Taghizadeh-Hesary & Yoshino, 2020). Educational institutions can ensure the development of low carbon management systems by utilizing raw and green resources through which sustainable development can get ensured (Owen *et al.,* 2018). The sustainability of goals is the way that is necessary for the betterment of green environment while the administration is highly devoted to work in the innovative way (Ng, 2018). The sustainability of work is influenced by the working behavior, and the green environment can be developed by the green financial support to the existing businesses (D. Zhang *et al.,* 2021).

H4: There is a significant and positive mediating role of Sustainable Development in the relationship between Green Financing and Low Carbon Management.

Green finance is vital for pursuing projects involving green strategies and renewable resources that can help reduce carbon emissions, due to which people can get saved

from several negative health impacts. It involves building an infrastructure of educational institutions resilient to changing climatic conditions, which can ensure the sustainable development of such institutes in the long run (M. A. Naeem & Karim, 2021; Nassiry, 2019). Sustainable development thus helps enhance carbon asset transactions by engaging the institutes in such practices which involve reducing carbon prices by which stakeholders are attracted to increasing investments in those institutions (Dorfleitner & Braun, 2019; Hafner *et al.,* 2020). In this way, green financing helps promote sustainable development in the educational sector, increasing the number of funds in the carbon market and thus improving carbon tax transactions. The educational institutes can thus make significant contributions to meeting the needs of the present generation and managing the available resources so that future generations can utilize them (Luo *et al.,* 2021). Sustainable development is considered as the key factor for appropriate achievements of the goals (Ng, 2018). These goals are necessary to be achieved when the organization is working in the productive way (Azhgaliyeva *et al.,* 2020). The green financing supported by the sustainability goals can be effective for the organization (D. Zhang *et al.,* 2021). Based on this, the hypothesis can be stated as follows:

H5: There is a significant and positive mediating role of Sustainable Development in the relationship between Green Financing and Carbon Asset Transactions.

Green financing contributes to sustainable development, which reduces the educational sector's overall emissions by utilizing energy-saving techniques. It helps those educational institutes gain a competitive advantage over other institutes in sustainable development (Cai *et al.,* 2019;

Li & Lin, 2016). The emission reduction technologies help in lowering the emissions, which create a significant impact on energy consumption. In this way, a balanced approach gets developed among the institutions by making them aware of all the environmental consequences resulting from unsustainable practices (An *et al.,* 2018; Luo *et al.,* 2021). Therefore, the institutions must drive development in this sector by considering the future impacts so that the energy can get reserved for upcoming generations and the surrounding environment will not deteriorate further. The concept of green financing is crucial for educational institutions as it helps the stakeholders persuade the institutes to adopt the techniques for ensuring sustainable development by focusing on environmental concerns so that the condition of the environment cannot get aggravated. Sustainable development ensures that energy saving and emission reduction technologies are implemented effectively (An *et al.,* 2018; He *et al.,* 2019). The sustainable development goals demand the protection of the natural resources, and green financing is useful for getting enough work to achieve these goals in the productive way (Ionescu, 2021). The green environment is improved when the organization is innovatively working to reduce the waste of energy (Taghizadeh-Hesary & Yoshino, 2020). Figure 1 of the study shows the relationship between green financing, sustainable development and other variables including low carbon management. Thus, this relationship can be hypothesized as follows:

H6: There is a significant and positive mediating role of Sustainable Development in the relationship between Green Financing and Energy Saving and Emission Reduction Technology.
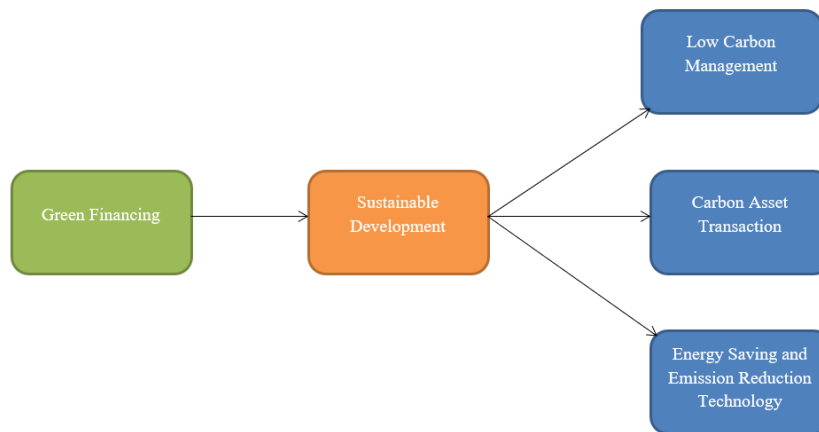

Figure 1. Conceptual Framework

Source: Current Study

Methodology

Research Context

The paper is aimed to define the conceptual framework of green financing in the context of the educational sector of China. However, the purpose is to investigate the role and impact of green financing on sustainable development. The term sustainable development in the research is based on the pro-environment behaviour of firms, including management

of low carbon emissions, carbon asset transactions and energy saving with emission reduction technology. All these factors contribute to the sustainable development of different organizations. Moreover, the paper explores the variables by analyzing the education sector. The target population is defined to be the teachers of universities in China. Due to the changing climatic conditions and ongoing hazards faced by underdeveloped and developing countries, the need for sustainable development has raised concerns

among the international community. Markets are bound to adopt green practices and reduce the emission of elements like carbon that create arms to the environment. Questions are raised on the concept of carbonization among industries. The paper involves the suggestions and analyses of university teachers on the management of low carbon emission, carbon asset transaction and energy saving with emission reduction technology. The paper analyzes the impact of green financing on the process of low carbon management, carbon asset transaction and energy saving with emission reduction technology, along with the mediation impact of sustainable development in the education sector of China. A quantitative approach is used with a questionnaire survey to find the relationship among the research variables. The method for the paper follows the description of population sampling and data collection technique, measurement scales for each variable, i.e., independent, dependent and mediator. Lastly, the analysis of the obtained data is also provided below.

Population Sampling and Data Collection

The paper follows a quantitative study while conducting the research. However, the target population for the research is defined to be the education sector of China. The university teachers are the sample for data collection. Moreover, the target country is China. The sample size is 350: 350 university teachers will be reached to obtain a response on the research context of sustainable development and green financing. Since, this study is on the education sector sustainability; therefore, this sample is considered as appropriate for the findings of the study. The data is collected with random sampling technique. A questionnaire survey is used for the data collection. Three hundred fifty questionnaires were distributed among university teachers in China to get responses to analyzing the impact of green financing on the process of low carbon management, carbon asset transaction and energy saving with emission reduction technology, along with the mediation impact of sustainable development in the education sector of China. The respondents of the study were ensured that their personal information wouldn't be shared with anyone. All of their quarries were answered regarding the purpose of the study

and scale items. The questionnaire is divided into two sections. The first section describes the demographic attributes of the target population. These demographic attributes may include age, gender, education etc. In addition, the second part of the questionnaire defines the variables of the paper. Each variable, dependent, independent and mediator, is used with a defined number of items. The number of items for each variable is obtained from different measurement scales. The questionnaire investigates the impact of green financing on the process of low carbon management, carbon asset transaction and energy saving with emission reduction technology, along with the mediation impact of sustainable development in the education sector of China. 335 questionnaires were obtained, which helped interpret results from the data collected from the questionnaire survey.

Measurement Scales

Different measurement scales are used for each variable. The measurement scales consist of a definite number of items used to analyze the variables. For instance, there are four items for dependent variables, e.g., low carbon management, carbon asset transaction and energy saving with emission reduction technology. Similarly, four items are used for the independent research variable, i.e., green financing and three for sustainable development. Each item is investigated in the context of the education sector of China. Besides, the items are interpreted with the help of Likert scales. The Likert scales vary from point 1 to point 5. Point 1 indicates respondents' disagreement, and point 5 indicates the substantial agreement of respondents. The adopted measurement scales with the number of items for each variable along with the reference of the author are given below. The green financing refers to the new way of financing that is not degrading the environment. Sustainable development is to work in the way where the future goals are achieved by not degrading the environment. Low carbon management is to reduce the emission of carbon for sustainability of the environment. Energy saving refers to less wasting the energy, rather using it with sustainable way. The measurement indicators are presented in Table 1.

Table 1

Measurement Indicators

Variables	No. of items	References
Green Financing	4	(Jinru, Changbiao, Ahmad, Irfan, & Nazir, 2021)
Sustainable Development	3	(Kang & Hur, 2012)
Low Carbon Management	4	(Luo et al., 2021)
Carbon Asset Transaction	4	(Luo et al., 2021)
Energy Saving and Emission Reduction Technology	4	(Luo et al., 2021)

Data Analysis

AMOS is used for the data analysis. It analyzes each variable based on a statistical approach in the research methodology. However, the study is a quantitative questionnaire-based survey approach, so AMOS helps interpret the responses received during the research. The questionnaires with responses are run through AMOS for data analysis of each variable. The hypotheses built during research are validated through AMOS, i.e., the impact of

green financing on the process of low carbon management, carbon asset transaction and energy saving with emission reduction technology, along with the mediation impact of sustainable development in the education sector of China. AMOS helps in finding whether the relationship is accepted or rejected without the interference of any personal or professional bias. Thus, the data analysis is easily attained with the help of AMOS.

Results

Respondent Profile

The focus of the study was on the pro-environmental behaviours of educational institutes and for that reason data was collected from employees (teachers and administrative staff) of Chinese educational institutes. The data was collected from a total of 335 employees, and it indicates that a major proportion of the sample were males i.e., 52.2 % (184) and 47.8 % of the employees were female. The information on the educational background of the respondents showed that 12 % had completed graduation, 43.4 % were post-graduates, 32.2 % had completed their masters, and 11.4 % listed their educational status as others. The age and experience information of the sample indicated that 24.4 % were aged between 21–30, and a significantly large portion of the sample was aged between 31–50 with 29.4 % listing themselves aged between 31–40 and 30.7 % between 41–50. The remaining respondents were aged above 50. The experience metrics show that 54.1 % had work experience of fewer than five years, 36.1 % had been working between 5–10 years, and the remaining 9.8 % had been working for more than ten years. The demographic information is presented in Table 2.

Table 2

Demographics

		N	**%**
Gender	Male	184	52.2 %
	Female	151	47.8 %
	Total	**335**	**100 %**
Education	Graduation	48	12 %
	Post-Graduation	137	43.4 %
	Masters	125	33.2 %
	Others	25	11.4 %
	Total	**335**	**100 %**
Age	21-30	75	24.4 %
	31-40	114	29.4 %
	41-50	87	30.7 %
	50+	59	15.5 %
	Total	**335**	**100 %**
Experience	Less than 5 Year	171	54.1 %
	5−10 years	134	36.1 %
	More than 10 years	30	9.8 %
	Total	**335**	**100 %**

Descriptive Analysis

Table 3 indicates the descriptive findings for the research variables. The table shows that most of the employees have accepted the fact that green financing is essential for the adoption of pro-environmental behaviour of educational institutes, and organizations in general. Most of the employees agreed that green financing is effective for ensuring sustainability in their institutes and therefore policies and processes should be designed for the adoption of the framework (M= 3.5, S.D = 1.11). Table 3 also indicates a positive and assertive response towards sustainable policy and development directives (M=3.6, S.D = 1.04) which indicates that employees from the educational sector agree that sustainable development is essential for the adoption of pro-environmental behaviours within the educational institutes. The three pro-environmental behaviours, low-carbon management, carbon asset transactions, energy saving, and emission reduction technologies had positive and assertive responses from the sample. The educational sector employees agreed that low-carbon and carbon asset management and energy-saving practices are essential for the adoption of green and sustainable practices within their institutes at the higher and secondary levels.

Table 3

Descriptive of Studied Variables

	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**	**Skewness**	
	Statistic	**Statistic**	**Statistic**	**Statistic**	**Statistic**	**Statistic**	**Std. Error**
GF	335	1.00	5.00	3.4231	1.15810	-.672	.133
SD	335	1.00	5.00	3.5274	1.09488	-.651	.133
LCM	335	1.00	5.00	3.3948	1.13297	-.558	.133
CAT	335	1.00	6.00	3.4440	1.05324	-.508	.133
ER	335	1.00	5.00	3.3963	1.00311	-.342	.133
Valid N (listwise)	335						

Table 3 also indicated that there was a lack of missing values in the data, outliers were absent, and variables were distributed normally as the skewness test statistics were within threshold limits, and minimum and maximum values were similar to the endpoints of the Likert scale and all variables were computed based on the similar sample size (Kim & White, 2004; Zygmont & Smith, 2014).

Factor Analysis

The factor analysis was conducted to evaluate the suitability of the measurement scales and to evaluate whether there were underlying associations among the scale items. Moreover, the KMO and Bartlett test was applied to study the adequateness of the collected data against the number of variables as well as whether the factor analysis would produce significant findings (Tavakol & Wetzel,

2020; Zygmont & Smith, 2014). The results for the KMO test are specified in table 4, and they show that the KMO factor was significant as it was nearing the value of 1 and higher than 0.7 (Luo *et al.,* 2021). The Bartlett test is an additional test used to study the interrelationship among the variables. The results in table 4 show that the test was significant as well indicating the presence of correlation among the factors. Thus, the sample data was adequate for the application of factor analysis.

Table 4

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.942
	Approx. Chi-Square	6085.304
Bartlett's Test of Sphericity	df	171
	Sig.	.000

Since the KMO test indicated significant results, factor analysis was used for studying the loading values of the individual scale items. Table 5 shows that green finance was measured based on 4 factors, sustainable development through 3 factors, low carbon management through 4, carbon asset transactions, and energy-saving emission

reduction technologies through four factors. The loading values of all factors are greater than 0.5 and therefore show that the constructs were reliable (Luo *et al.,* 2021). There was no cross-loading observed in the matrix as well, therefore the factor analysis deduced significant results for the model.

Table 5

Rotated Component Matrix

	Component				
	1	2	3	4	5
GF1	.695				
GF2	.779				
GF3	.833				
GF4	.828				
SD1					.823
SD2					.811
SD3					.796
LCM1		.836			
LCM2		.837			
LCM3		.824			
LCM4		.820			
CAT1			.848		
CAT2			.881		
CAT3			.806		
CAT4					
ERT1				.828	
ERT2				.876	
ERT3				.832	
ERT4				.840	

Convergent and Discriminant Validity

The results for convergent and discriminant validity are presented in table 5. The table lists the results for composite

reliability and average variance extracted which are measures for composite reliability of the constructs. The composite reliability evaluates the internal consistency of the constructs. The values of CR are between 0.823 and

0.942, which are all above the cut-off value of 0.7. The values of AVE are between 0.604 and 0.882, which are also all above the cut-off value of 0.5. Thus, both CR and AVE values indicate the presence of convergent reliability and therefore indicate the presence of internal consistency of the constructs (Ramayah, Cheah, Chuah, Ting, & Memon, 2018). Furthermore, the discriminant validity of the measurement model is studied based on the traditional approach suggested by Fornell and Larcker (1981). The Fornell-Larcker criterion suggests that the square root of AVE for every construct must be greater than the other correlations established by the construct and also that the loading value for each construct should be highest among other correlations. Both of these criteria are fulfilled as indicated by the results in table 6, therefore discriminant validity is also prevalent in the model.

Table 6

Discriminant and Convergent Validity

	CR	AVE	MSV	GF	SD	LCM	CAT	ERT
GF	0.923	0.693	0.359	**0.867**				
SD	0.919	0.717	0.312	0.866	**0.887**			
LCM	0.942	0.882	0.349	0.671	0.587	**0.945**		
CAT	0.872	0.604	0.315	0.590	0.531	0.401	**0.818**	
ERT	0.823	0.657	0.472	0.576	0.662	0.473	0.752	**0.882**

Measurement Model Fitness

The fitness of the measurement model was studied through the application of several goodness of fit tests. These tests are used for the evaluation of the reliability, validity, and consistency of the results presented by the structural model. CFA is used for studying the fitness of the measurement model results. Findings from table 7 show that the measurement model presented in figure 2 was consistent and fit. This figure is representing the confirmatory factor analysis that is checked for validty and reliability. The indices are all according to the cut-off values presented in table 7, and therefore the measurement model was deemed fit.

Table 7

Confirmatory Analysis

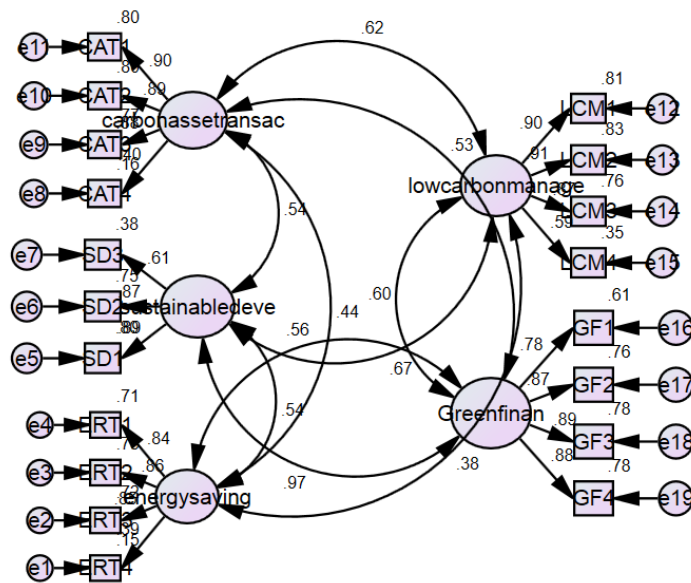| CFA Indicators	CMIN/DF	GFI	IFI	CFI	RMSEA
Threshold Value	≤ 3	≥ 0.80	≥ 0.90	≥ 0.90	≤ 0.08
Observed Value	1.489	0.892	0.938	0.918	0.037

Figure 2. CFA

SEM

The hypotheses established in section 2 were studied based on the application of structural equation modelling. The status of acceptance and rejection of the hypotheses is presented in table 8 and the structural path adopted by the constructs is indicated in figure 3. The figure 3 is representing the structural equation model in visual for the understanding of the readers. Table 8 shows that the impact of green finance on low carbon management and carbon asset transactions was significant and positive. A unit increase in green financing approaches in the educational sector would result in increased low-carbon management by 66.1 % and carbon asset transactions by 45.2 % within the educational sector of China. These hypotheses were found significant at 0.01 level as p <0.01. However, the impact of green financing on emission reduction and energy-saving technologies was insignificant and therefore hypothesis 3 was rejected.

Table 8

Structural Equation Modelling

Path			Estimate	S.E.	C.R.	P
GF	<---	LCM	.661	.041	16.172	***
GF	<---	CAT	.452	.045	7.326	***
GF	<---	ERT	.089	.048	1.348	.146

The study also focused on sustainable policy developments as a mediator and table 9 presents the findings for mediation. Findings show that the mediation of sustainable development was positive as indicated by the significant and positive effects of sustainable development on all three dependent and the independent variable. The indirect mechanism between GF →SD→ERT was significant as well.

Table 9

Indirect Effects

	GF	GF	GF
SD	.000	.000	.000
CAT	.245**	------	----
ERT	------	.164**	----
LCM	------	------	.270**
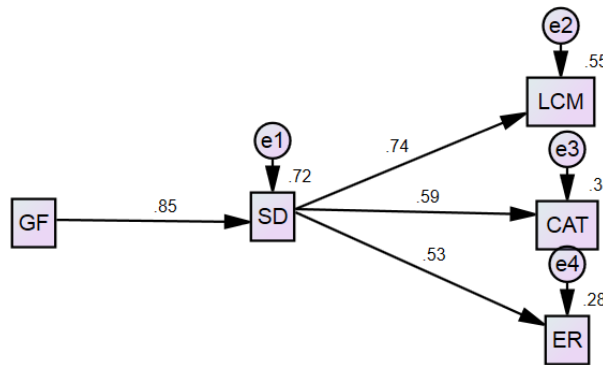
Figure 3. SEM

Discussion

The increase in environmental degradation and increasing climatic disasters have led countries towards the adoption of sustainable processes and pro-environmental behaviours to conserve natural resources and aid the recovery of the natural environment. Usage of green finance and focus on sustainable policy development is a key to attaining pro-environmental behaviours within institutions, both corporate and non-corporate. The paper suggested a framework where green financing was considered a stimulant for the adoption of pro-environmental behaviours of institutions. The study focused on the educational sector as the Chinese education sector has been focusing on the application of sustainability directives and is actively looking to reduce its contribution to waste and pollution in the country. The education sector in China generates a lot of paper waste, which in turn uses up a lot of energy and water - leading to increased air pollution and waste issues. To help reduce this, staff and faculty in China's educational institutions are being encouraged to discourage the use of non-recyclable materials such as paper and plastic packaging. With growing environmental concerns, humans are increasingly compelled to adopt more environmentally friendly lifestyles - including investing in green infrastructures and adopting low energy technologies (Khair, Rachman, & Matsumoto, 2019). The present study focused on the effects of green finance as a predictor of pro-environmental behaviours adopted by firms including low carbon management, carbon asset transactions, and energy saving and emission reduction technologies. Findings from the analysis show that there is a positive and direct association between green finance and low carbon management (p<0.01, β=0.661) and green finance and carbon asset transactions (p<0.01, β=0.452). The study also focused on the indirect effects of sustainable development and found that the effect was significant for all three associations i.e., low carbon management (β= 270**), carbon asset transactions (β= .245**), and energy saving and emission reduction technologies (β= .164**).

Green financing is a strategy that encompasses the financial aspects of transitioning to efficient resources and low carbon emissions (Sartzetakis, 2021). Organizations can adopt this strategy to ensure sustainable development, as green financing has several benefits. It encourages the adoption of technological strategies for enhancing the infrastructure based on green techniques, which can help achieve a competitive advantage and improve economic prospects (Lee *et al.,* 2017). Green financing helps institutions become more sustainable by reducing pollution and promoting the use of green strategies, and aids corporations and institutions in the management of their carbon assets and sustainability directives effectively. Organizations play a role in developing low-carbon

management systems by using raw and green resources to ensure sustainable development. These findings support the mediation of sustainable development between pro-environmental behaviors and green financing. Similarly, some studies also emphasized on the value of green financing in the modern time (Ng, 2018). The green financing is considered as critical for the better working of the organizational for environmental sustainability (Hemanand *et al.,* 2022). The green financing is considered as critical for the sustainable development of the environment (Irfan *et al.,* 2022). The role of green financing in the industrial sector has changed the environment protection policy, and now the environment can be protected in the far better and advanced way (Polzin & Sanders, 2020). The green financing is useful to control the environmental degradation and this importance must be implemented in all sector all over the world (D. Zhang *et al.,* 2021).

Green financing is vital for integrating low-carbon management practices in educational institutes, as it is for the corporate sector (Ionescu, 2021; Wang & Zhi, 2016). The environmental strategies adopted by different institutes depend on the external pressures from the stakeholders to persuade them to implement proactive environmental strategies (Tang & Tang, 2019). Also, the scope of adoption of green practices and construction within the Chinese educational sector suggests that organizations must ensure carbon asset transactions to finance green initiatives (Farrukh *et al.,* 2021; Pan *et al.,* 2019; Sari, Jati, Raharja, & Yuyetta, 2021; Sartzetakis, 2021; Tang & Tang, 2019). These findings indicate that the application of these concepts within the framework of an educational institute might lead to similar results, and therefore the findings of the present study are supported.

Conclusion

The present study explored a relatively novel avenue within the research on pro-environmental behaviours. The study focused on the factors influencing the practice of pro-environmental behaviours within the context of the Chinese educational sector and explored sustainable policy development and green finance as influencers of pro-environmental behaviours. The paper aimed to explore the relationship between green finance, sustainable policy development, and firm pro-environmental behaviour and found that green finance is an effective predictor of organizational pro-environmental behaviours. The education sector in China is vital for the country's development and economic growth. China has made significant improvements in the education sector in recent years. Educational institutes play a substantial role in achieving sustainable development in the country and therefore the findings from the study will be significant for

the sustainable development of the Chinese educational sector. The findings of the study suggest that green finance is a significant predictor for mobilizing low-carbon management and carbon asset transactions in educational institutions, however, it doesn't predict the adoption and implementation of energy saving and emission reduction technologies. The findings of the study present implications and directions for future research and therefore contribute effectively to the literature.

Implications

The study aimed to represent green finance as a stimulant for the pro-environmental behaviours of organizations. The findings of this study are significant for creating awareness about environmental problems and their solutions in public, academic institutes, and among students. Green school initiatives are being pushed by the government to achieve sustainable development in China, but the practice of environmental education is not commonly shared yet. This study aimed to fill that gap by analyzing how green financing can be used to achieve sustainable development in the Chinese educational sector by combining all the essential and emerging components into a unified framework. The results attained by the study prove that green financing is key to the adoption of pro-environmental approaches within educational institutes. Thus, these results will add to the literature on sustainability, green financing, and carbon asset management literature. The findings of the study are also useful for management and policymakers as it indicates that green financing furthers environmental concern in organizations and thus can be used for the development of relevant policies and processes.

Limitations

The present study is subject to several limitations i.e., the study doesn't specify the level of educational institutes from where data was collected. Thus, future researchers should focus on the specification of the level of institutes to refine the findings within the educational sector. The second limitation is that the study only considered green finance as a predictor and other factors like commitment to the environment, stakeholder pressure, and environmental concerns can be used within the theoretical framework as well. Additionally, the study is only focused on China's education sector, which suggests that the research is only generalizable to other countries with a similar economy and industry more specifically, just the education sector of those countries. Also, the study is based on quantitative data which future researchers can build upon by using qualitative methods to study the process of green innovation in more depth.

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