

**Impact of Corporate Environmental Ethics on organisational performance: The Mediation
Role of Green Innovation and Environmental Training**

Hussnain Akbar

Abstract

Purpose: The prime purpose of the study was to determine the mediating effect of green innovation and environmental training in the relationship between corporate environment ethics and organisational performance.

Method: The study adopted the quantitative research approach and thus executed a survey involving 261 respondents representing Pakistani firms. The study utilised SEM as the data analysing technique to determine the mediating effect by using SmartPLS.

Findings: The findings suggest that there is no direct effect of corporate environmental ethics on organisational performance; however, in the presence of the mediating variables, the impact was found significant. The study confirms that green innovation and environmental training mediate the relationship between corporate environmental ethics and organisational performance.

Limitation: The study lacks qualitative evidence; therefore, the study does not provide much insightful knowledge.

Key Words: Corporate environmental ethics, organisational performance, green innovation, environmental training, Pakistan.

1. Introduction

Green innovation has become the most essential and significant tool for companies in the last decade as environmental sustainability is one of the most important focuses. Corporate ethics plays a vital role in enabling a sustainable outcome from a company's procedure or actions. Most firms are utilizing green innovation methods in their production process that are used to enhance corporate social responsibility (CSR) status for the firms (Chang, 2011). More importantly, companies are allocating their resources in an efficient manner that includes utilizing green innovation in preparing products in the manufacturing sector and green innovation service implementation for the service sector. Corporate environment ethics receive greater attention today because of the profitability and sustainability that the firms are constantly seeking and to prepare the tactics accordingly. Furthermore, the purpose of business ethics is to provide

guidelines and direction via principles that can be used to minimize moral complexity and ambiguity when dealing with the external environment (Schuler et al., 2017).

Organisations utilise corporate ethics as a tool to capture a sustainable future for the company in terms of CSR and to show their concern towards the environment. Strategic business decisions are also dependent on green innovation and environmental training methods that are constantly being carried out in the firm to train the human resources to act in a sustainable manner. Corporate environment ethics intends to examine the organisational dynamics and the dimensions in which organisations are operating. Top management plays a significant role in bringing the green culture to their respective organisations and tends to motivate the hierarchy and production unit. Green innovation and culture are formed in the organisation that tends to enhance its competitive position and to gain an edge over its competition (Gürlek and Tuna, 2018).

The impetus of the study is that the previous study was not conducted on the combination of two mediating variables that are taken in this research which are green innovation and environmental training. Both variables are much recognized in the corporate sector, and most companies tend to focus on training methods focused on environmental sustainability in Pakistan (Singh et al., 2019). Internal structures were developed on the basis of corporate environmental ethics that are aimed at achieving the main goal of the company, i.e., maximizing the return of shareholders. Firms must take care of preventing and reducing the actions that are against environmental sustainability (Manrique and Martí-Ballester, 2017). Businesses in the modern world can be successful with the proper implementation of corporate environmental ethics to maintain effective brand equity for companies. In past studies, various investigators have discussed the negative implications of the immoral and unethical behaviour of organisations that show social stratification that causes negatively to the environment in Pakistan (Malik and Kanwal, 2018). This study is about utilizing corporate environment ethics in which two factors could be used to properly implement sustainable practices such as green innovation and environmental practice.

Business ethics in terms of environment is an important tool for the management of a firm to develop effective market share and enhance the financial performance of the firm. Financial revenues can be increased if the organisational efforts can be diverted towards environmental sustainability and green innovation practices (Alhadid and As' ad, 2014). Ethical environment training is now common and deals with motivating the morale of employees and are able to change the system or structure of organisations to develop effective progress financially.

Green innovation facilities are developed in the company that could be able to produce innovative products, but they should also be sustainable.

Various external environmental pressures exist in the market that are forcing organisations to revolutionize their production system according to green practices (Küçükoğlu and Pinar, 2015). Environmental protection requires trained resources that can execute innovative green activities in the companies. Therefore, the major aim of the management is to provide suitable training that is sufficient to enhance performance. Environment ethics brings the important concern of the employees that are not contented with the change that could be used to bring innovation. Green innovation can be used to enhance the return on investment and could be used to influence financial stability and profitability.

2. Literature Review

Corporate environmental ethics are always necessary for the sustainability of an organisation, as per a study conducted (Chang, 2011). It has been explained in the study that corporate environmental ethics help business organisations not only for their sustainability but also help to provide a contribution towards the economic system as well as different types of benefits to bring people together. There is always a need for financial institutions for business organisations for various purposes in order to make economic and financial management decisions for the progress of an organisation. Therefore, organisations require the set of enforcement of business in terms of corporate environmental ethics to keep themselves protected and to conserve ethics. Such examples of financial institutions are bankers, manufacturers, transporters, etc. According to the study conducted by Lee (2018), it has been revealed that a variety of challenging situations have been observed in terms of ethics for corporate organisations in society. These corporate credos emphasize the management of an organisation to provide a direction in terms of corporate social responsibility as well as ethical corporate social responsibility.

Meanwhile, there is another study has been conducted by Afshar and Brem (2018), and this study argues that environmental ethics always affect and influence environmental technology as well as business operations. Corporate environmental ethics play a significant role in the green innovation of a company because the top management of an organisation or company has their concern to speed up the performance of the company among its competitors as well as to increase its scope in different dimensions of the market. There is no doubt in this regard that the role of management is also very crucial at this stage which always tries to

establish the norms of an organisation along with its expectations about ethics. In light of the resource-based view theory, the corporate culture is valuable, non-substitutable, inimitable, and rare (Singh et al., 2019). Hence, in this way, it has been concluded that these types of environmental ethics are significantly related to the overall performance of organisations. In other words, the survival of an organisation can also be achieved by providing goods and services in a dependent environment and social-economic conditions, and for that, a hypothesis has been created as follows.

H1: Corporate Environmental ethics has a significant impact on organisational performance

According to the study conducted by (Du et al., 2014), it has been revealed that competitive advantage can only be achieved by different companies and organisations upon the creation of certain capabilities as well as strategies that create value. These values must be non-substitutable as well as non-transferable. The extent of these resources can only be signified on the basis of the capability to manage these resources. In other words, it can be stated that if a company or organisation processes to manage such resources, ultimately, the performance of the firm will be high. Meanwhile, one of the driving forces is green in waste awareness as well as a competitive advantage is corporate environmental ethics which is also considered the main element for the overall structure of an organisation (Chen and Chang, 2013).

A study by Fshar (2018) has revealed that competitive advantage is always provided to an organisation if it is involved in green innovation and green management as a part of its organisational mission. There are also several factors that are being considered by the management of organisations, and these factors enable the management to adopt green innovation practices as it increases the market demand (Singh et al., 2018). Therefore, this is considered one of the important issues which always needs to be understood in a strategic and operational way that how market demand can be increased as a part of enhancing the overall performance of a company. In the same way, this perception of improvement in an organisation in the context of environmental management is also discussed by Aboelmaged (2018) in his study, and this aspect is argued in such a way that green innovation has a significant impact in order to satisfy a variety of requirements in Environmental regulation in our region. However, corporate environmental ethics is also an antecedent towards green innovation in order to play a mediating role between firm performance and corporate environmental ethics. Meanwhile, corporate environmental ethics are formalized with the help of corporate values and expectations due to the reason of ethical behaviour in order to drive force for green innovation and competitive advantage. Hence, on the basis of the above discussion, the following hypothesis is

proposed to understand the relation between green innovation practices and their influence on competitive advantage and environmental performance.

H2: Green innovation significantly mediates the relationship between Corporate Environmental ethics and organisational performance

Environmental training is another aspect that is being considered as a root for environmental sustainability, and this aspect aims to develop the set of ability, skills, motivation, involvement towards operational segments and goals of organisation and commitment, etc., as per the study conducted by (Zhang, 2018). Environmental training plays such a crucial role in the behaviour of employees, and in this way, it has been concluded in the study that it is very necessary for organisations to enhance environmental performance as well as a competitive advantage. There are a number of desktop researches conducted to enhance the commitment and competence towards innovative ideas towards organisational performance. From these researches, a large number of empirical evidence concluded which ascertains environmental training has a mediator role in order to influence environmental ethics along with organisational performance and competitive advantage.

H3: Environmental training significantly mediates the relationship between Corporate Environmental ethics and organisational performance

3. Theoretical framework

This section provides a detailed overview of the theories that can be useful in understanding the research subject.

3.1 Stakeholder theory

The theory deals with examining the phenomena behind the organisational functioning in the corporate world and why each firm seeks to develop effective green innovation practices that could be useful in carrying out effective business functions. Each firm strives to build sustainable environmental practices via green innovation in order to enhance the relationship with the stakeholders and satisfy the concerned stakeholders of the firm. The stakeholders are instrumental in influencing both the responsiveness of the corporation and the strategies regarding the environment (Weng, Chen, and Chen, 2015). Forming corporate policies that are ethical and environmental for adopting green innovation can be a result of the stakeholder's perspective, which is essential for the shareholders of an organisation.

3.2 Socio-environmental theory

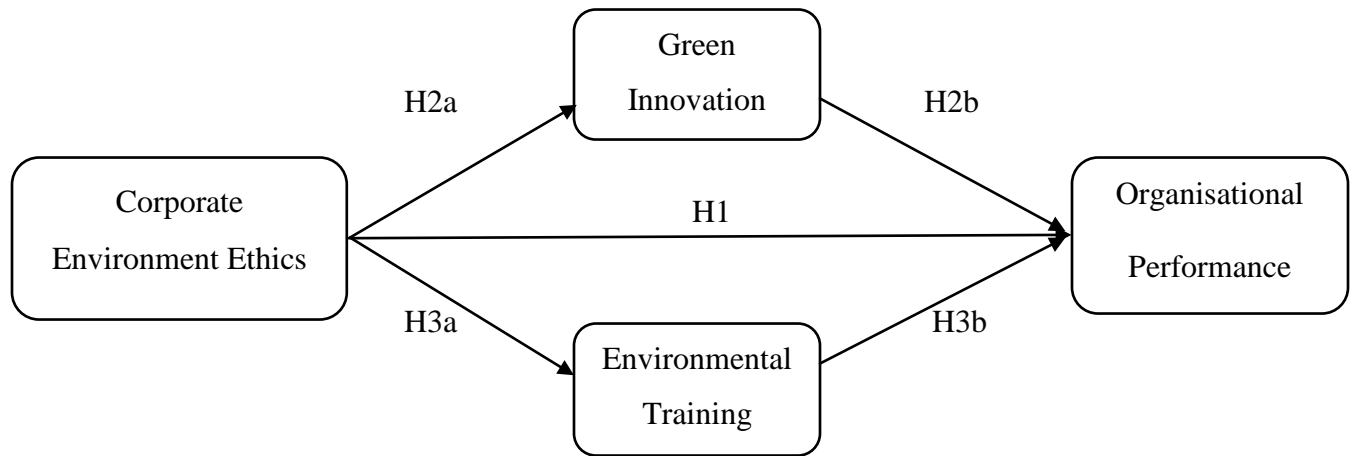
The theory deals with examining the perspective of human beings. In this case, the employees that are working in the multinational organisation, their behaviour and thinking process bring the change that has the capacity to affect the environment (Ribeiro, 2010). The sustainable environment thinking possesses by the corporation tends to bring societies into a modern green environment. The sustainable actions carried out by organisations aim to bring well-being to society or the community. The socio-environmental theory discusses the relationship of an environment with the human thinking process and how the management of the corporate sector is shaping actions in order to transform societies green. A sustainable future via a green environment is one of the effective ways that could be used to enhance the environment.

4. Conceptual Framework

In the below-positioned framework, the researcher has intended to encase the flow of the study. The figure below is referred to as the conceptual framework and has been designed with the specific purpose of demonstrating at brief what the research problem is about and what is the scope of the study. As discussed, the current study deals with analysing the impact of corporate environment ethics and organisational performance. Hence, it can also be suggested that corporate environment ethics is the independent variable of the study, whereas the dependent variable of the study is organisational performance. Therefore, the foremost hypothesis that has been developed pertains to the relationship between corporate environment ethics and organisational performance.

Besides determining the direct effect of corporate environment ethics and organisational performance, the other important aspect of this is to determine the mediating effect of the two mediators that are involved in the current study. The first mediator can be identified as green innovation, which in the below figure develops a link between the independent and dependent variables. On the basis of this, the hypothesis, i.e., green innovation mediates the relation between corporate environment ethics and organisational performance, has been formulated and is numbered as H2. In addition to this, the second mediator which the study entails is environmental training. In the below framework, it can also be observed that a linkage between the corporate environment ethics and organisational performance has also been formed. This, therefore, has also enabled the researcher to develop another hypothesis with respect to the mediation environmental training. The developed hypothesis H3 was as environmental training

significantly mediates the relation between corporate environment ethics and organisational performance.



5. Research Methodology

5.1 Population and Data Collection

The present research has been intended to investigate the impact of corporate environment ethics and organisational performance in the presence of the two mediating variables, green innovation, and environmental training. The nature of the study demands the inclusion of the firms on which the concerned research phenomenon can be investigated. The study has been conducted in the context of Pakistan and has involved the number of employees as a participant in the survey that has been executed. The present research has followed a quantitative research approach where 261 respondents have been involved in the survey process. Here it becomes essential to mention the researcher developed a self-administered questionnaire that was circulated among the respondents by means of online, especially by e-mail.

While comprehending the nature of the study, it can be observed that the involvement of diverse respondents from every business is clinical to include. For instance, while predicting firm performance, it was essential to involve the respondents from the finance or accounts in order to gather insights regarding the financial and overall performance of firms. Further, it was also required to include the research and development department of the firms so those insights regarding the green innovation for the selected firms. Hence respondents belonging to this department could be involved in order to cover this aspect. Moreover, in order to cover the mediating role of environmental training, the human resource department from each of the selected firms was also accessed.

While performing a survey, the sample size calculation and estimation emerge as an important phenomenon. Different methods and assumptions are used for the estimation of the correct sample size. Similarly, the researcher in the present research has also referred to the findings of McNeish (2016), where the researcher has provided a mathematical model for the sample size calculation. The findings of the aforementioned researcher referred to 384 samples as an adequate sample for the enhancement of the information-gathering process. The mathematical model for the sample size estimation is as follows:

$$n = \frac{z^2 \times p \times (1 - p)}{e^2}$$

In the above model, some of the parameters are essential to discuss. For instance, z denotes a critical value at the confidence level of 95 %, thereby making it 1.96. Also, p in the above expression refers to the variability proportion, which is assumed as 50 %, so the value of 0.5 can be put in the above expression. Also, the margin of 0.05 as an error is also considered during this form of sample size estimation. Upon calculation, the number 384 can be obtained.

$$n = \frac{(1.96)^2 \times 0.5 \times (1 - 0.5)}{(0.05)^2} = 384$$

Nonetheless, the researcher was familiar with the notion of the response and was also aware of the fact that online, the chances of a lower response rate increase. Therefore, the researcher planned to provide a survey questionnaire to 400 respondents in order to gather the desired number of responses. However, a total of 261 survey questionnaires were received in an acceptable form. Therefore, the response rate for the study can be 65.2 %.

5.2 Sampling Technique

There can be used different types of sampling techniques. However, the most suitable technique is subject to practicality and accessibility. The researcher in the present research could not involve all the Pakistani small and large firms. Therefore, the researcher has intended to involve the proportion of the actual population by preferring the non-probability sampling dimension. Moreover, the specific technique which has facilitated the researcher in the data collection phase is the purposive sampling technique. The purposive sampling technique encouraged the researcher to be judgmental while targeting the population.

5.3 Instrument

The research instrument that assisted in gathering the responses from the larger population was the self-administered survey questionnaire. Moreover, the questionnaire was based on a five-point Likert scale.

5.4 Data Analysis Technique

Structural Equation Modelling has been utilised as the data analysis for testing the mediation effect. The statistical technique is distinct because of its robustness and in validating the constructs. The tool through which SEM has been used was SmartPLS. Here it becomes essential to mention that SEM mainly comprises confirmatory factor analysis and Path assessment.

6. Results and Analysis

6.1 Confirmatory Factor Analysis

One of the important aspects of SEM is considered CFA. The purpose of CFA is to assess the factors on the basis of their reliability, convergent validity, and discriminant validity. In the following table, statistical measures like Cronbach's alpha and composite reliability have been included. With regard to the findings of Maindal (2016), the threshold for Cronbach's alpha and composite reliability is considered 0.5. In the following table, it is evident that the values for Cronbach's alpha and composite reliability have appeared as greater than 0.6. This suggests that factors are reliable and consistent. Furthermore, the convergent validity of factors has also been measured through AVE. The threshold for AVE is identified as 0.5. In the present case, it can be observed that every AVE has appeared as greater than 0.5, thereby suggesting each factor possess convergent validity.

Table 1: Reliability and Convergent Validity

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Corporate Environmental Ethics	0.885	0.915	0.684
Environmental Training	0.940	0.957	0.847
Green Innovation	0.920	0.944	0.807
Organisational Performance	0.862	0.916	0.785

Besides reliability and convergent validity, the distinctness among the variables, i.e., discriminant validity, is also computed with the support of the HTMT ratio, whose threshold is

considered as 0.9 or near 0.9. In the following table, the highest computed HTMT ratio has been computed as 0.920 and can be claimed near 0.9. Hence, it can also be deduced that the factors are distinct from one another.

Table 2: Discriminant Validity

	Corporate Environmental Ethics	Environmental Training	Green Innovation	Organisational Performance
Corporate Environmental Ethics	0.827			
Environmental Training	0.666	0.920		
Green Innovation	0.638	0.681	0.898	
Organisational Performance	0.451	0.512	0.571	0.886

6.2 Path Assessment

One of the most prominent characteristics of SEM is to execute path assessment in order which is essential for determining the mediating effect. The table below (Table 3) also strives to examine the direct effect of the variables on one another. The t-statistics (B=0.666, p=0.000<0.05) suggest that CEE has a significant and positive effect on one of the mediators, i.e., environmental training. Also, CEE also has a positive and significant effect on the other mediator, i.e., green innovation, on the basis of the t-statistics (B=0.638, p=0.000<0.05). However, no significant effect has been observed on organisational performance by CEE due to the t-statistics of B=0.067, p=0.411>0.05). Moreover, the table also suggests that both the mediators have a positive and significant effect on the dependent variable of the study on the basis of the obtained t-statistics (B=0.201, p=0.029<0.05) and (B=0.391, p=0.000<0.05) for environmental training and green innovation respectively.

Table 3: Direct Effect Testing

	Path Coefficient	T Statistics (O/STDEV)	P Values
Corporate Environmental Ethics -> Environmental Training	0.666	13.791	0.000
Corporate Environmental Ethics -> Green Innovation	0.638	15.763	0.000
Corporate Environmental Ethics -> Organisational Performance	0.067	0.823	0.411
Environmental Training -> Organisational Performance	0.201	2.179	0.029
Green Innovation -> Organisational	0.391	4.927	0.000

Performance

The following table (Table 4) is concerned with specifying the specific indirect effect to confirm the presence of the mediation effect. The t-statistics ($B=0.134$, $p=0.040 < 0.05$) suggest that CEE has a significant and positive indirect effect on organisational performance, thereby confirming the mediating role of environmental training in the relation between CEE and organisational performance. Further, on the basis of the t-statistics of ($B=0.250$, $p=0.000 < 0.05$), it can be confirmed that green innovation also has a mediating role in the relation between CEE and organisational performance.

Table 4: Specific Indirect Effect

	Path Coefficient	T Statistics (O/STDEV)	P Values
Corporate Environmental Ethics -> Environmental Training -> Organisational Performance	0.134	2.050	0.040
Corporate Environmental Ethics -> Green Innovation -> Organisational Performance	0.250	4.890	0.000

The following table (Table 5) is concerned with determining the total effect of mainly CEE in the presence of the mediator's green innovation and environmental training. In the prior table (Table 3), it has already been found that there is no significant effect of CEE on organisational performance. While referring to the t-statistics from the table below, it can be suggested that CEE also has a significant and positive effect on organisational performance on the basis of the t-statistics ($B=0.451$, $p=0.000 < 0.05$). Also, while referring to the other relations, it can also be observed that a significant effect is observed among the mediator and dependent variable and among independent and mediating. On the basis of this, it can be suggested that green technology and environmental training fully mediates the relationship between the independent and dependent variable.

Table 5: Total Effect of the Study

	Original Sample (O)	T Statistics (O/STDEV)	P Values
Corporate Environmental Ethics -> Environmental Training	0.666	13.791	0.000

Corporate Environmental Ethics -> Green Innovation	0.638	15.763	0.000
Corporate Environmental Ethics -> Organisational Performance	0.451	6.668	0.000
Environmental Training -> Organisational Performance	0.201	2.179	0.029
Green Innovation -> Organisational Performance	0.391	4.927	0.000

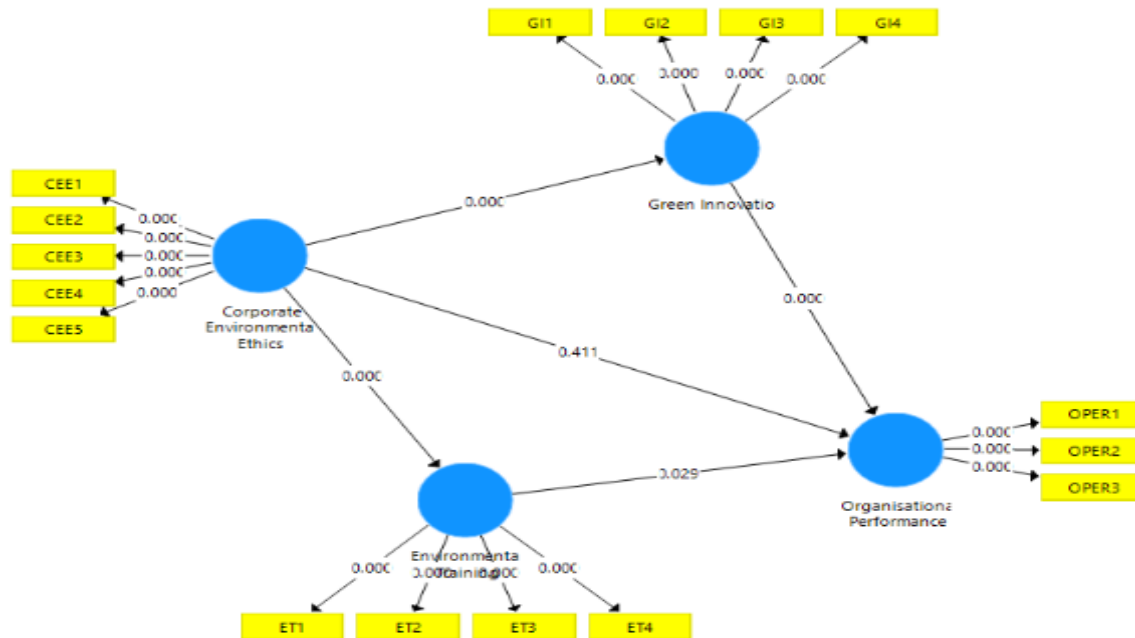


Figure 1: Model after Bootstrapping

7. Hypothesis Summary

S.NO	Hypothesis	Status
H1:	Corporate Environmental ethics has a significant impact on organisational performance	Rejected
H2:	Green innovation significantly mediates the relationship between Corporate Environmental ethics and organisational performance	Do Not Reject
H3:	Environmental training significantly mediates the relationship between Corporate Environmental ethics and organisational performance	Do Not Reject

8. Conclusion

Based on the obtained results, it can be summarised that within the context of Pakistani firms, there is no significant effect of corporate environmental ethics on organisational performance. However, the study has found in the presence of the mediating variables, which

were green innovation and environmental training, the impact of corporate environmental ethics on the organisational performance has been found significant. This further suggests that green innovation and environmental training significantly mediate the relationship between corporate environmental ethics and the performance of the targeted firms operating in Pakistan.

9. Limitations

The present study has investigated the concerned research phenomenon solely through the objective lens in which the analysed survey responses have constructed the findings of the current study. However, it is suggested that in-depth research is greatly supported by qualitative evidence. Therefore, one of the limitations of the present research is that it lacks qualitative evidence. Also, the study has mainly been executed from the context of Pakistani firms and therefore lacks generalisability.

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