The Effect of Environmental Corporate Social Responsibility on Environmental Performance and Business Competitiveness: An Evidence From Cement Industry of Pakistan

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ABSTRACT

Purpose: Organization have been focusing on expansion in the area of environmental corporate social responsibility (ECSR) resulted with an increase in natural sustainability and green business management. Moreover, the impact of ECSR on green capital speculation, environmental performance, and business competitiveness has likewise been the subject of consideration from ventures. In any case, in past examinations, the interceding job of green information technology (IT) capital in the connection between ECSR, environmental performance, and business competitiveness, has not been explored by social scientists. So as to connect this gap in the ECSR writing, this study intends to inspect the impact of ECSR on green IT capital, and the ensuing impact of green IT capital on environment performance, and competitiveness of business particularly for cement sector of Pakistan.

Design/Methodology: A self-administered questionnaire was projected to a sample of 200 respondents from the cement industry of Pakistan. Famous cement manufacturing units were selected for the study. Convenient sampling technique was applied in order to scrutinize the respondents. Data set was analysed with the help of Statistical Package of Social Sciences (SPSS).

Findings: The outcomes affirmed that ECSR has noteworthy beneficial outcomes on green IT human capital, green IT structural capital, and green IT relational capital. Green IT structural capital and green IT relational capital positively affect environmental performance and business competitiveness, and environmental performance positively affects business competitiveness. Likewise, green IT structural capital and green IT relational capital have fractional interceding consequences for ECSR, environmental performance, and business competitiveness.

Implications: This paper reveals an implication for the executives and policy makers to make policies and take measures of their implications that are helpful in reducing environmental pollution to contribute their part in contribution towards Environmental Corporate Social Responsibility (ECSR)

Keywords: Environmental Corporate Social Responsibility, Green Information Technology, Business Competiveness

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1.   Introduction

In today's conscious and market competitive environment corporate social responsibility (CSR) has important place in all over the globe (Jamali & Mirshak, 2007). CSR become buzzword in the 1990s although it trends exist since the 1970s. Commitment and accountability are two key aspects of CSR which must be based on understandable, reliable, and accurate reporting. CSR also enables the maximum profitability of enterprises while reducing wastes and eliminate the defects. On the other hand, CSR also play a vital role toward company stakeholders, it strengthened the company policies and also enhanced the advocacy behaviors of stakeholders. CSR is also connected with the sustainable development enforced that companies should take decisions not only about their financial concerns but also on the social, environmental and other activities. In past decades, it has been observed that corporate social responsibility CSR has gained increasing concern both academically and practically. Hence, in real sense the corporate social responsibility has major focus on "social" responsibility (e.g, fair wages payment to employees and community based programs), but a recent progression in this topic is insertion of "environmental" responsibility (e.g, depletion of CO2 excretion). Therefore, the "environmental" factor is becoming a vital ingredient of corporate social responsibility and considered to play crucial role in corporate framework. Therefore, ECSR brings new advancement in corporate social responsibility CSR which directly influenced environmental performance, business competitiveness, and green investment capital. Business must not pay attention only on its profitability and growth but also concerned with social and environmental influences.

ECSR is a growing concern for almost all business units therefore, firms have willingly started to include environmental factor into CSR, which enables business units to enhance their productivity with decreasing the emission of waste volumes to minimize their effect on coming generations (Mazurkiewic, 2004). Consequently, organizations are under huge pressure for environmental concerns due to considerable emphasis of environmental protection by government and environmental organizations protection (Berry and Rondinelli, 1998).

While ECSR is the fundamental source of company competitiveness and it strengthened the company whole processes effectively. Most previous studies show that environmental issues directly affected company's environment and its stakeholders. But recent studies present that approach of ECSR effectively reduces the environmental factors and it also sustains and maintains businesses performance. In other words, environmental performance is a positive factor of ECSR which increases business competitiveness and also provides a boost to bring market competitiveness. In the context of government policy, ECSR also included the ways that companies used to controlled emission of toxic chemicals, pollution, and emission of carbon particles while developing a green energy saving plans. The one more important thing is that ECSR should include information about valuable environmental factors on waste material and inventory emissions. It should include some positive factors like company credibility, stakeholders' performance and

government disclosure. Studies shows ECSR focused on incorporate environmental consciousness and developed advanced operations to reduced environmental impacts. Scholars believe that positive and sustained environment of business can increase the satisfaction level of customers and stakeholders, also producing a unique advantage. In addition, all these factors expand performance related to environmental concerns, which not only bring business opportunities but also generate maximum benefits and reduce pollution, product costs and businesses risk.

Environmental CSR is gaining considerable importance and attention in academic research due to its growing importance among practitioners. An extensive literature is working to observe and explore the reasons why firms engage in environmental CSR and explore the link of environmental CSR with corporate performance. There are some scholars such as Hamilton (1995) and Klassen and McLaughlin (1996) who investigated the link between environmental CSR and performance of stock market. Above mentioned studies conclude direct association between environmental CSR and stock prices movement therefore, it is in knowledge of very few that this relationship has evolved with the passage of time.

However, the previous literature related to the effect of ECSR on corporate financial performance is negative in majority with some studies showing indecisiveness. Hence, it is concluded by Bird et al. (2007) that there exists a negative relationship between firm's excess return and one year ECSR activity. It is further suggested by Horvathova (2010) in meta-analysis study through using the data of 37 companies, that empirical result still show indecisiveness to determine the relationship between ECSR and corporate financial performance. As nearly half of studies shows the result which indicates the positive link while rest of studies demonstrate either negative or inconsiderable effect.

Research and development (R&D) is considered as very important function for any business to play vital role in gaining competitive advantage over the competing units. R&D is treated as an agent that acts to boost up organizational growth. It is investigated by Jaffe and Palmer (1997) that ECSR has positive relationship with future R&D of a firm. Therefore, R&D and innovation are considered as positive linked value of a firm so it establishes an indirect but positive link between ECSR and firm value or firm performance. Consequently, the connection between ESCR activities and firm's performance allows room for investigating the global effects of ECSR concerns directly as well as indirectly. It has been observed by previous researchers that although ECSR incurs additional costs to business, it also causes to reduce costs in other areas (Ravindra & Pradeep, 2012). It is investigated by Erdmann et al. (2004) and Hilty et al. (2006) that information and communication technologies demonstrate mixed impacts on the environment.

From small businesses to multinational enterprises, Information Technology (IT) is considered as a key part of any business. In short, businesses simply stop without IT. Previous literature suggested that apart from impact of IT on the environment, IT also causes reduction in cost and provide a differentiation to business, IT has also significant impact on business competitiveness and hence, enhance the market competition. Hence, it is considered that IT

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performs a vital role in maintaining a competitive edge. It has also been observed that benefits of IT are increasing from cost reduction to generating more benefits and value for a business. Simultaneously, green IT is not only considered to be cause of cost reduction but companies also fulfil their CSR through green IT and also by creating their brand value. Furthermore, studies show that green IT played a mediating role with the relationship of ECSR, environmental performance and business competitiveness has not been investigated widely by previous researchers (Chuang, 2016). The main purpose of this study is to examine the influence of ECSR on green (IT) capital, and its major effects on environmental performance as well as on the business competitiveness. In addition, green IT capital save more energy and improves the green image of enterprises. Furthermore, IT is also a main component of business capability and its values and creates a vital role in business competitiveness. IT as a part of environmental technology solves environmental problems, meets the demands of society effectively and efficiently. Appropriate use of green IT can create differentiation in products and reduce their ultimate cost.

It has been investigated by Orsato (2006) that IT is considered as a technique to save energy and cause reduction in emissions hence, IT strategy gives competitive edge to a business. Dedrick (2010) concludes that organizations that practiced implementing green IT, must consider the applicability of the technology, and the effects of characteristics of organization and environmental elements. In addition, IT capital investment is constant activity, which results in maximizing business competeveness and also maintains strength of organizational green image. Therefore, it is crucial for organization to put long term emphasis on the impact of green activities (Chuang & Huang, 2015).

This study aims to investigate the link between variables taken in this study that are, ECSR, green IT capital, environmental performance and business competitiveness, having the aim to gain better understanding of the influence of ECSR on business competitiveness. Hence, the major objectives of this research are:

1. To explore the benefits that a business can achieve from ECSR
2. To investigate the overall relationships between ECSR, green IT capital, Environmental performance and business competitiveness
3. To explore the mediating impact of green IT capital in the connection between ECSR and environmental performance
4. To explore the mediating impact of green IT capital in the relationship between ECSR and business competitiveness

1.1   Research Questions

The present study is going to attempt the answer of three research questions which are:

1. Can businesses achieve any benefits from ECSR?

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2.   Is there any relationship exists between ECSR, green IT capital, Environmental performance and business competitiveness?

3.   Is green IT capital having a mediating effect between the relationship of ECSR and environmental performance?

4.   Is green IT capital having a mediating effect between the relationship of ECSR and business competitiveness?

2.   Literature Review

To achieving consistent and successful results, it is considered to be essential that existence of the relationship between variables must be clear. The association between ECSR and environmental performance should be positive while ECSR, green IT capital, environmental performance and business competitiveness have some relationships among them. Several studies in the existing literature define some positive relationships among these variables but few give mixed results. Maignan (2002) uses almost four countries data and compares the content of business communication with CSR and investigates the nature of processes, principles, and stakeholder issues. The combined results show that these all four countries do not display the same results. Each country shows significant and diverse output of CSR. Furthermore, results show that each country may have different policies and regulations for CSR. Buysse (2003) defines the empirical analysis between stakeholder's management and environmental strategies. This paper mainly focuses on the proactive environmental strategies that cover the deeper and broader aspects of stakeholders. These environmental strategies introduced the total quality environmental management processes. Stakeholders are more conscious about green environment and they create competitive advantage for their own firms. Their satisfaction level improves business suitability and increases over all business performance.

Klein (2004) believes that CSR plays an important role toward product evaluation and its attribution. They analysed that CSR improves overall performance of products, and it also minimizes the wastages during production processes. In this paper clearly defines CSR mediate the impact of product but it may harm product attributes. Whenever product attribute does not match with consumer behaviour. This study introduces the mediating effects of CSR on consumer behaviour. While at the same time, it improves and sustains the overall performance of entire business operations. Saha and Darnton (2005) concluded that over past years' companies had just started focusing on dabbled the environmental improvement. They had only been focused on easy things such as reducing packaging and recycling, while improving only their products and operations. But now in the existing modern world, the companies aim to produce products in a sustainable environment. They produced things in a profitable way (like introduced new manufacturing processes that create less waste). Companies investigate green strategies and practice these strategies in real environment. Company's strategy and motivation level leads to improving

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overall green performance. Many companies would like to be seen as "green". In this regard CSR management take decisions for "green" credentials about products, processes, activities and so on.

McWilliams (2006) mostly focused on CSR's strategic implications. While also define CSR as situations where most of firms go beyond their compliance and engaged in good social actions, and away from the interests of the firms that is required by law. CSR shows many activities that are incorporating and contributing in the main features of products. Study focused that CSR mainly used environmental friendly technologies, permitting the employee empowerment. CSR also helps in achieving the higher level of performance through recycling and reducing emissions of useless inventory. In this way CSR brings positive results and also showing direct relationship with firm's performance. Guenther (2007) assessed environmental reporting of extracting industries, such as mining, oil and gas. Many potential environmental issues arise due to these industries operations. Therefore, extracting industries mainly focused on ECSR. On the other hand, companies maintain their licence to operate and extract the mineral; have embraced the CSR. In this paper industries take an initiative towards promotion of stability. The study's objective was to describe the relationship between extractive industries and CSR.

Sustainability and natural issues are quickly rising as a standout amongst the most essential themes for vital business, the board, operations, and product development and innovation choices. The main point of discussion is that "Does it pay to be Green?" Generally, the concept of CSR is considered related to the environmental sustainability and friendliness. But, due to this the costs also go up and the global competitiveness becomes at stake. Most of the researchers have approved this as to be a tool to enhance the business performance. Likewise Ambec and Lanoie (2008) concluded the win-win situation which means that it has a positive impact over the financial and environmental performance. Molla et al. (2008), also argued that the Green IT practices have a key role in the sustainability and competitiveness of any business.

Implementing the Green IT practices is a key factor and also an important and difficult one. Rodríguez (2009) says that during the time spent executing green duties, not just instrumental and natural inspirations assume a key job, yet in addition the interior hierarchical exercises, in expansion to the results of the execution itself. In the meanwhile, in the support of the argument, Chen (2008) leads to the point that organizations putting numerous assets and endeavours in green capital couldn't just meet the patterns of strict worldwide ecological guidelines and prevalent natural awareness of buyers; yet additionally in the end acquire corporate upper hands.

The impression of the green business practices to the business processes is good and positive. Smith and Perks (2010) discovered huge connections between these factors. It was discovered that the capacities least affected by green business rehearses are general administration, production network the executives and IT. Further examination of the business capacities uncovers that the assembling/manufacturing, sales and distribution capacities are the most affected by green business rehearses. While discussing about the alignment of progressiveness and profitability with the Green IT approach, there is no predefined methodology for this alignment. The researchers fill

this research gap with the integration of Green IT practices with the emphasis to develop a green IT alignment framework in order to coupe up with the underlying situation or scenario (Loeser et al., 2011). In addition to this, Chang (2011) concluded that the Green product and process innovation mediates the positive connection between the business competitiveness and environmental performance. This implies that greening does leave a good impact over these attributes. Chang (2012), by using the Structural Equation Modeling (SME), proved that the Green human, structural and relationship capital depict a mediation between the CSR and the environmental realization, which means that if the environmental CSR is being related to any other attribute, Green IT capital does mediate the situation either in human, structural or relational Capacity. Along this Poser, Guenther and Orlitzky (2012) verified that the Green IT practices help to quantify the corporate environmental performance and the business competitiveness. Sezen and Cankaya (2013), on the basis of 53 responses from manufacturing firms in Turkey, investigated the influence of green processes over the corporate sustainability economic, environmental and social performance and found that the green processes application has a notable positive impact on these corporate performances and emphasis that these must be adopted in order to go with the flow of the current market and economic situation.

Agan et al. (2014) explored the association between CSR, environmental supplier development (ESD) and firm performance. They used data collected from 314 Turkish manufacturing plants to conclude that CSR is positively related to ECD which consequently positively influence financial performance and competitive edge of firms. From top 1000 manufacturing units in Taiwan, Chuang and Huang (2015) used a survey sample of 148 companies to conclude that business greening is positively impacted three dimensions of green IT capital (green IT human capital, green IT structural capital and green IT rational capital), which in turn have direct relationship with business competitiveness. Chuang and Huang (2018) estimated that ECSR is positively correlated with business competeiveness and environmental performance. The relationship has been mediated by green IT capital (green IT human capital, green IT structural capital, green IT rational capital). To conclude the results, data has been collected from 358 firms from top 100 manufacturing units of Taiwan. DiSegni, Huly and Akron (2015) argued organizations that reinforce and practice social responsibility and environment contribution gained higher profit margins as compared to the relative industry. Therefore, there exist a significant positive relationship between social responsibility, environment sustainability and financial performance. According to Liu, Wang and Lee (2015) firms that are adopting environmental corporate social responsibility (ECSR) certified by Non- Government institutions gets benefits from this certification in terms of business competition. The factors influencing environmental sustainability in professional sports teams and leagues in the context of North America were explored by Trendafilova, Babiak and Heinze (2013). They stated that environmental sustainability positively impacted numerous initiatives of CSR related to League for example money saving, strengthening relationships with stakeholders etc.

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2.1 Research GAP:

From the above literature, although CSR has positive influence for companies' performance, but now check weather business performance influenced the CSR policies in a positive way. And these both elements give any idea about business competitiveness.

Saha and Darnton (2005) discussed about company's strategies. Although companies getting business competitiveness in the formulation of strategies. Company's performance also improves in terms of overall green environment. Second gap in research is that researchers attempt to find whether this green environment total dependent on CSR.

The third gap find by Guenther (2007) discussed about extracting industries. These industries influenced the overall environmental practices. The purpose of this study is to find, whether ECSR, CSR and business performance have any linkage among them?

2.2 Hypothesis Formulation

In summary, the CSR means businesses use the realization of environmental concerns to increase environmental sustainability, and that will be optimized by stakeholders. While, CSR includes in the active part of strategies and plans of organizations, employee trainings and creative products are regulated through these practices to ensure a sustainable business. In other words, ECSR improves the environmental performance and mainly focuses on green practices in environment. Therefore, sustainable business activities are achieved through green IT. Consequently, businesses that show more concern on ECSR are more likely to make long-term investments. Hence, on this basis, our study formulates following hypothesis:

H_1 (a): There are no benefits of ECSR to businesses

H_1 (b): There is a negative relationship between ECSR, green IT capital, environmental performance and business competitiveness
and environmental performance?

H_1 (c): There is no significant mediating impact of green IT capital on the relationship between ECSR and environmental performance?

3. Data and Methodology

This study select cement industry of Pakistan. Mainly three cement manufacturing firm that is, Askari Cement Limited, Fauji Cement Company Limited and Facto Cement Factory are taken for analysis. The study thoroughly analyses their manufacturing processes, waste elimination, their activities and their impacts on environment and business competeveness. The study collects data from approximately 200 respondents through Convenient Sampling technique. Our basic target audience are those, whose education must be equal or more than graduation having equal or more than 3 years of working experience. They might be managers, middle line staff and could be clerical

staff. The study has taken three variables; these are ECSR as an independent variable, environmental performance and business competitiveness as dependent variables. While we have taken Green (IT) Capital as a mediating variable, which create a strong relationship among ECSR, environmental performance, and business competitiveness. The variable ECSR, directly influenced on business competitiveness and environmental performance which are influenced by green IT capital.

3.1 Modes of Instruments

A self-administered questionnaire with some close and open ended questions is used a method to collect data about related variables. This questionnaire is based on all independent and dependent variables which are part of our research. Subsequently, questionnaire is physically presented to some cement industry managers; some are distributed in safety environment department. Some questionnaires were mailed electronically to cement manufacture industries. The respondents received cover letter attached to each questionnaire that describes the objective of our research and assured respondents of their confidentiality.
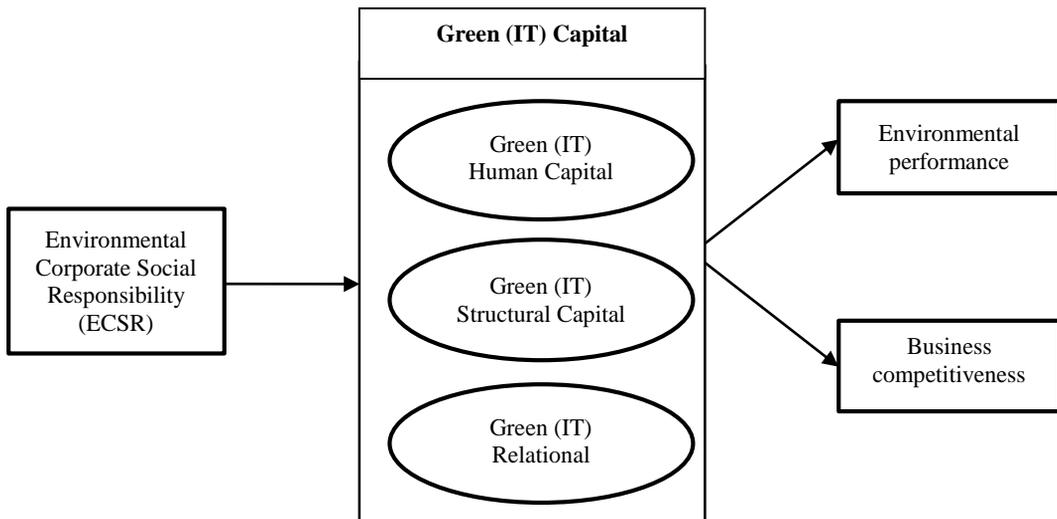

Figure 1: Research Framework

We ensure to maintain anonymity of the respondents therefore, providing respondents to response fairly without any hesitation. We do not pay respondents any incentives regarding participation in our research. We only deal with actual results and strictly restrict any type of biasness hence; we do not hide anything related to results of our results.

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4.   Results and Discussion

The means, standard deviation, correlation, and regression of measures of all variables are presented in the following tables. The Cronbach alpha is the reliability measure. Based on the frequency test 100 respondents answered the questionnaire. They were all male. There are 91% male whose have qualification as master degree holder, and they are valid for our analysis. Moreover, the income from 20,000 to 30,000 PKR is very valid in which area we have to be focused. Mostly the people from 41years to 60years are valid for our results. In this particular field they have experience about 11years to 20years which is considered to be more important for result proceedings. The following tables define the results of their respective frequencies.

Table 1 Frequency Table

Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	100	100.0	100.0	100.0

Education

	Frequency	Percent	Valid Percent	Cumulative Percent
Matric	32	32.0	32.0	32.0
Graduation	31	31.0	31.0	63.0
Masters	28	28.0	28.0	91.0
Mphil	9	9.0	9.0	100.0
Total	100	100.0	100.0	

Income

	Frequency	Percent	Valid Percent	Cumulative Percent
20000	34	34.0	34.0	34.0
30000	15	15.0	15.0	49.0
40000	23	23.0	23.0	72.0
50000	9	9.0	9.0	81.0
60000	19	19.0	19.0	100.0
Total	100	100.0	100.0	

Age

	Frequency	Percent	Valid Percent	Cumulative Percent
20-30	42	42.0	42.0	42.0
31-40	27	27.0	27.0	69.0
41-50	21	21.0	21.0	90.0
51-60	8	8.0	8.0	98.0
above 60	2	2.0	2.0	100.0
Total	100	100.0	100.0	

Experience

	Frequency	Percent	Valid Percent	Cumulative Percent
1-5years	35	35.0	35.0	35.0
6-10years	21	21.0	21.0	56.0
11-15years	14	14.0	14.0	70.0

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16-20years	18	18.0	18.0	88.0
above 20 years	12	12.0	12.0	100.0
Total	100	100.0	100.0	

While the descriptive statistics show the results about dependent variable with the accordance of independent variable. In these results we have 100 0bservations. Below the table of Descriptive Statistics which shows the mean, median and standard deviation of each variable. The mean and median both identify the central tendency of the data. Also the standard deviation only defines the spread of data. The standard deviation is to determine how spread out the data is from the mean. These all variables showing significant and valid results for further studies.

Table 2 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Dev.
Ecsr	100	1.00	3.67	1.9900	.56943
Git	100	1.00	3.00	1.7933	.46367
Ep	100	1.00	3.50	1.9700	.59806
Bc	100	.67	3.00	1.8033	.59571
Valid N (List-wise)	100				

Table 3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.373[a]	.139	.112	.53652
a. Predictors: (Constant), bc, git, ep				

Here is the model summary table reports the R^2 = 13.9% that shows the variations of dependent variable with respect to independent variable. It also defines the strength of relationship of independent variable green IT capital with the ECSR dependent variable.

Table 4 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	4.467	3	1.489	5.173	.002[b]
1	Residual	27.634	96	.288		
	Total	32.101	99			
a. Dependent Variable: ecsr, b. Predictors: (Constant), bc, git, ep						

The F-value=5.173 and the probability value highly significant at 0.002. The significant value shows that our model is stable with these all variables. Dependent variable ECSR has significant relationship among all the independent variables.

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Table 5 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.260	.252		4.997	.000
	Git	.399	.129	.325	3.102	.003
	Ep	.146	.100	.154	1.457	.148
	Bc	-.152	.100	-.159	-1.525	.131
a. Dependent Variable: ecsr						

The coefficients of variables show the positive and negative relationship with their significant level. Here both independent variables green IT capital and environmental performance have positive relationship with the dependent variable ECSR. Results show that business competiveness has negative relationship with ECSR. The Green IT Capital < 0.005 has significant performance towards the ECSR. With the positive increase of ECSR brings positive and significant change in Green IT Capital. It is indicated that green IT capital has mediating effect between ECSR and environmental performance, but there is no positive relationship between business performance and ECSR.

4.1 Practical Implications:

In the development process of Pakistan, manufacturing sector plays vital role. As CSR and protection of environment are main concerns of every business, therefore with the collaboration of their employees, businesses have started to move in line with the direction of environmental protection. Present study provides with some managerial implications related to ECSR and green capital.

By adopting the ECSR activities such as providing products and services that are compliant with environmental sustainability, the organization promote an understanding of organizational environmental policies and promoting pro-environmental attitudes towards its employees. Additionally, along with investing in green capital, cement sector should increase its relations in market with green partners and combine their strengths to gain a competitive advantage. Moreover, companies should also focus on environmental protection hence; make policies to reduce environmental pollution in order to become environment friendly.

5. Conclusion

In past studies, issues related to corporate environmental, environmental performance and ECSR have not been connected to inquire about on green IT capital. Be that as it may, environmental performance is a habitually utilized as a barometer of firms' environmental assurance and natural administration execution results. This study tends to address the absence of research on green IT

capital in the study of corporate environmental issues, and improves the argument on green IT capital and also builds up an extensive exact structure that can be utilized by analysts dealing with applicable green themes later on. Our study shows that dependent variable ECSR has significant relationship with all the independent variables. Both independent variables green IT capital and environmental performance have positive relationship with the dependent variable ECSR. Results show that business competeveness has negative relationship with ECSR. The Green IT Capital has significant performance towards the ECSR. With the positive increase of ECSR brings positive and significant change in Green IT Capital. It is indicated that green IT capital has mediating effect on the relationship of ECSR and environmental performance, but there has no positive effect of business performance with ECSR. Despite the fact that the current study discover that environmental performance has a noteworthy constructive outcome on business competitiveness, in the connection between environmental performance and business competitiveness, there is still no fundamentally scholastic proof to prove whether environmental performance impacts business competitiveness or whether business competitiveness impacts environmental performance.

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