

Impact Of Ecsr On Green Innovation

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Abstract

The objective of this study was to examine the correlation between ECSR and green innovation while controlling for various other factors. Recently, there has been a growing interest in the concept of ECSR, or Environmental, Social, and Corporate Responsibility, as well as green innovation, as a means of promoting long-term sustainability for organizations. The present study involved the collection of data from a sample of 500 participants representing various organizations associated with green innovation and possessing relevant knowledge. A Likert scale questionnaire was utilized in this study, employing a closed-ended format. The statistical analysis of the data involved the utilization of regression and correlation techniques within the SPSS software. The findings suggest that the variables under investigation have a positive impact on green innovation. This study incorporates the variables of ECSR, green individual value, green identity, EEHP, and green transformational leadership.

Introduction

Background of Study

Human life and well-being are both being hurt by organisations' increasing damage to the environment, which is a direct effect of their actions. Because of this, groups should take care to keep the environment clean and make sure that their operations don't hurt the natural habitat around them. People think that the organisations play a very important part because if they don't do things in a way that is good for the environment, it could lead to an ecological imbalance (Ahmad et al., 2021). Because of this, people think that organisations are important for ensuring environmental control. Organisations can use a variety of tools, such as effective environmental platforms and smart investments that lead to cleaner production, to deal with environmental problems and find answers. Because of this, it is important for companies to have a solid understanding of the many Corporate

Social Responsibility (CSR) activities and strategies that can be used to ensure healthy growth (Mushtaque et al., 2021).

Leitao et al. (2019) say that eco-innovation is "a strategy, a system, and a way of doing things that is used to avoid or lessen the impact on the environment." As a result of both the growth of new technologies and a better understanding of the market, steps can be taken to improve operational competence in analysing the company's internal needs. (Huang et al., 2019) says that one of these steps is to get new materials. Businesses must first identify important sub-industries, sustainability plans, internal organisational links with green innovation, ownership rights over the strategy's execution, and performance measures before they can adopt values that don't take cultural diversity into account (Mushtaque, Waqas, et al., 2021). Albort-Morant et al. (2016) say that it is also important to keep track of results. One goal of green innovation is to get rid of anything that could be bad for the earth. Environmental CSR

has been shown to have a big effect on green innovation (ECSR).

Problem Statement

The goal of this study is to find out if CSR-E has an impact on green innovation or not. This is the problem being looked into. To reach this goal, a number of different factors have been looked at and put under the right heading in the conceptual framework. Even though businesses should care about the environment, most businesses in Pakistan don't. Because of this, the number of environmental problems in Pakistan is getting worse (Ahmad et al., 2021). Organisations should find a mix between the economic benefits of taking care of the environment and the economic benefits of taking care of the environment by making sure they meet CSR standards. On the other hand, most organisations in Pakistan either don't know about the United Nations' goals for sustainability or aren't ready to put them into action. Because of this, people need to know about it right away (Raimi et al., 2022). The goal of this study is to find out how CSR affects environmentally green innovation by using green Human Resource Management (HRM), green individual value, and green transformational leadership as moderators and green identity and Employee Environmental Harmonious Passion (EEHP) as mediators. This inquiry is relevant to the environmental problems that organisations are having right now because it looks at the problems from the point of view of CSR and talks about what the organisations are doing to solve these problems. During this investigation, CSR will also find the environmental problems that need to be fixed. Green revolutionary leadership, green individual worth, green identity, green HRM, and EEHP will be given a lot of attention.

Research Objectives

The aim of this investigation is to find the impact of ECSR on green innovation. For this purpose, the following objectives have been deployed:

- To investigate the impact of ECSR on green innovation
- To evaluate role of green identity on green innovation.
- To evaluate role of EEHP on Green innovation.
- To find role of Green HRM on Green innovation.
- To investigate role of green individual value on green innovation.
- To identify role of green transformational leadership on green innovation.

Research Questions

The research questions of this investigation are:

- What is the impact of ECSR on green innovation?
- What is the role of green identity on Green innovation?
- What is the role of EEHP and Green innovation?
- What is the role of Green HRM on Green innovation?
- What is the role of green individual value on Green innovation?
- What is the role of green transformational leadership on Green innovation?

Significance of the Study

Research needs to be done on how ECSR affects green creation. This study can teach companies a lot about how they can help protect the environment and keep it in good shape, drive economic growth and job creation, appeal to consumers who care about the environment, and manage environmental risks and compliance. By doing this study, we can learn more about how ECSR can help make the future more stable and prosperous for everyone.

With the help of the results of this study, businesses can improve their ways of doing

business by adopting ECSR and making their green innovations better. Theoretically, this study is important because of what it can add to the fields of business and sustainability as a whole. Here are a few ways in which this study would be important from a theoretical point of view:

Theory of ECSR: By looking at how ECSR affects green innovation, scholars can learn more about what drives and motivates ECSR and how it can be used effectively in the real world. This could help improve and add to ECSR ideas that have already been made, as well as help make new ones.

Literature Review

ECSR

In light of the escalation of environmental catastrophes resulting from the confluence of unscrupulous commercial pursuits and a heedless human disposition (Banyte, et al., 2018), corporate entities are turning to Corporate Social Responsibility (CSR) as a means of recompense. There is an anticipation that enterprises would undertake deliberate endeavours to integrate ecological considerations into their business practises and undertakings. These initiatives encompass raising awareness among individuals regarding the advantages of eco-friendly products, advocating for ecotourism, fostering environmentally responsible conduct in professional settings, and various analogous undertakings. Subsequently, these investigations were utilised as the empirical foundation for the development of a comprehensive organisational perspective on environmental conservation, commonly referred to as ECSR. Williamson et al. (2016) posited that the concept of Environmental Corporate Social Responsibility (ECSR) pertains to the supplementary exertion exerted by organisations to incorporate environmental considerations into their business practises and interactions with their stakeholders. The contribution of businesses to sustainable

development is evaluated based on their ability to mitigate, minimise, or eliminate adverse environmental impacts while simultaneously maintaining or improving their economic performance.

Green Innovation

According to Basana et al. (2022), the term "green innovation" pertains to the process of reducing the likelihood of environmental exploitation and mitigating its adverse effects on resources, particularly energy. Tang et al. (2017) provide examples of green innovation, which refer to the development and implementation of environmentally beneficial technologies and practises. These innovations encompass a range of initiatives, such as energy conservation, pollution reduction, waste recycling, production of eco-friendly products, and management of the company's ecological surroundings. As a result of the firm's investment in eco-friendly technologies, it has attained the capability to produce goods and deliver services that are designed to have minimal or negligible impact on the surrounding natural environment (Wong et al., 2012). Moreover, enterprises that adopt environmentally beneficial innovations experience a rise in their competitive advantage (Tarigan et al., 2021). The objectives include cost reduction in chemical waste disposal, aiding companies in adhering to government regulations, eliciting positive feedback from stakeholders to expand customer base, and achieving superior product quality. Furthermore, it is expected that there will be an increase in the effectiveness of environmental management as a result of this development (Chiou et al., 2011). Sáez-Martnez et al. (2016) posit that eco-innovation provides a fair and equitable platform for companies to engage in environmentally sustainable innovation as a means of fulfilling their corporate environmental responsibility in the face of the urgent issue of climate change. The objective of eco-innovation is to enhance a

company's ecological and financial performance by adopting eco-efficiency practises.

Technological factors and sustainable green practices

The discourse on technological issues pertains to an entity's pertinent internal and external technologies, alongside its extant technological milieu (Tornatzky et al., 1990). The utilisation of the terms relative advantage, complexity, and compatibility is prevalent in scholarly literature, as evidenced by the works of Grover (1993) and Ramdani et al. (2009). Sahin (2006) discusses the comparative advantage of the invention in relation to the benefit it supersedes. The concept of complexity pertains to the level of difficulty associated with the development, execution, or utilisation of an innovation, as stated by Sahin (2006). The concept of "comparability" pertains to the degree of alignment between an innovation and pre-existing benchmarks of worth, past encounters, and consumer demands (Sahin, 2006). The field of technology serves as a source of inspiration for further technological advancements. According to Lin and Ho (2011), the adoption of an environmental management system can be considered as a technological innovation. The development of novel technologies is influenced by various factors, as evidenced by the studies conducted by Chege and Wang (2020a) and Singh, Khamba, et al. (2017) and Singh, Tan, et al. (2017). On the other hand, the study that is currently being done focuses on the comparative advantages and complexity that are associated with different approaches to the preservation or management of the environment (Efendi et al., 2020; Lin & Ho, 2011; Singh Khamba, & Nanda, 2017; Singh, Tan, et al., 2017).

The perceived usefulness of an innovation is influenced by the technological factor of relative advantage. The utilisation of technology by enterprises is aimed at enhancing their productivity and profitability, as indicated by

previous research (Rogers, 2010; Tornatzky & Klein, 1982). The concept of "compatibility" pertains to the degree to which an innovation aligns with the specifications, norms, and protocols of the organisation. Lin and Ho (2011) and Singh et al. (2017a, 2017b) have suggested that technological advancements offer a relative benefit that promotes the adoption of innovation and has a favourable impact on environmentally friendly behaviours, as posited by Everett M. Rogers (2003). The contemporary technological developments and the extant technology have facilitated the dissemination and adoption of eco-friendly practises (Etzion, 2007; Lin & Ho, 2011).

Organisational factors contributing to green practices

The TOE model posits that organisational factors constitute the second component in the context of researching technological innovation. Various frameworks have been employed to delineate the organisational aspects, as noted by Chege and Wang (2020). Baker (2012) highlights the attributes of organisational resources, which encompass factors such as firm size, communication procedures, and management endorsement. Borgman et al. (2013) have identified several significant constructs, including the size of the firm, the level of top management support, and the IT proficiency of non-IT personnel. The size of an organisation is a crucial determinant in the adoption of technological innovations. According to Thong (2015), sizable corporations typically possess the advantage of being able to allocate resources towards both the funding of innovative projects and the facilitation of their execution. According to Ramdani et al. (2009), the provision of resources and the creation of a favourable environment for technological innovations require the support of top management. The IT competencies of non-IT personnel have a significant influence on the organisational

aspects of technological advancements, as emphasised by Grover (1993). The adoption of environmental management systems is positively associated with these variables (Hassan et al., 2022).

According to Del Brío and Junquera (2003), the implementation of technological innovations and the integration of green practises into organisational processes are intricate procedures that necessitate advanced training and the cultivation of human resources. The effectiveness of training programmes is contingent upon the proficiency and aptitude of the personnel. Consequently, the adoption of sustainable green practises is positively influenced by the quality of human resources. The degree to which an organisation provides support is a determining factor in the implementation of sustainable green practises. Employees who exhibit motivation are more inclined to embrace environmentally friendly practises and execute sustainable behaviours (Mushtaque et al., 2022). The facilitation of green practises adoption is made effortless by the existence of support from the organisation.

Environmental factors and sustainable green practices

The segment of the TOE framework that pertains to environmental factors denotes the external environment of the organisation. According to Lee (2008), the provision of governmental support serves as a catalyst for businesses to adopt eco-friendly approaches. According to Aragón-Correa and Sharma's (2003) assertion, technological innovation can facilitate the adoption of ecologically sustainable practises by businesses, particularly in an era marked by pervasive uncertainty. The behaviour of individuals towards environmental conservation is influenced by various environmental factors (Mushtaque, Awais-E-Yazdan, et al., 2022). The implementation of green human resource management is unattainable without external

assistance. Environmental groups may face the risk of failure in the absence of government assistance. According to Rahman et al. (2018), HR practises that are environmentally responsible are promoted by environmental factors. According to Rahman and Aydin (2019), the implementation of Green Human Resource Management (HRM) is influenced by external environmental factors present in the Task-Environment of the organisation. The management of the supply chain encompasses the various external activities involved in the process. The operational processes of the supply chain can be influenced by the surrounding ecological, social, and economic factors within the company's operational context. The implementation of environmental legislation has incentivized the adoption of environmentally conscious practises (Aboelmaged, 2018). Prior to the implementation of ecologically sustainable supply chain strategies, it is imperative for a company to consider the environmental impact, as posited by Hwang et al. (2016). Environmental factors have an impact on marketing as well. The success of green marketing is contingent upon a supportive environment (Ahmed et al., 2023). According to Chung (2020), it is imperative that environmental factors are conducive to the promotion of green marketing. Organisations employ eco-friendly technologies due to environmental considerations. The innovative activities of an organisation are influenced by government and legal policies pertaining to environmental protection, as stated by Chen et al. (2018). The successful implementation of eco-friendly technologies in everyday life is contingent upon various environmental factors such as support, assurance, policy orientation, and market orientation, as posited by Zhang et al. (2020). There are several factors that may have contributed to a range of significant advancements. The implementation of environmentally friendly strategies is influenced

by environmental concerns, as stated by Chong and Olesen (2017).

Sustainable Green Practices and Sustainable Performance

One of the most significant issues we currently have is sustainability (Al Hammadi & Hussain, 2019). Businesses are being forced to discover new revenue streams due to growing environmental concerns (Saudi et al., 2019). When it comes to implementing environmentally friendly practices, small and medium-sized firms must overcome a number of obstacles (Chang et al., 2018). Their objective is to operate a firm sustainably while using resources as effectively as feasible (Chege & Wang, 2020a; Omri, 2020). According to the resource-based perspective, companies with special abilities and environmentally friendly business practices can maintain sustainable levels of performance and acquire a competitive edge.

On the other hand, the effect that sustainable practices have on sustainable performance has barely been touched by the research that has been done up to this point. A range of environmentally friendly behaviors, such as green and environmental activities, are associated with sustainable performance (Borga et al., 2009; Phan et al., 2020; Reyes-Rodriguez et al., 2016). On workplaces, the COVID-19 outbreak had an impact (Hassan, Malik, et al., 2022). More investigation into the nature of the relationship under consideration in this case is now possible thanks to this. Because prior studies mainly examined either single environmentally friendly measures or combinations of two practices, a comprehensive model has not been discovered. According to Block et al. (2021; Fitriasari, 2020), the pandemic has been awful for businesses, particularly small and medium-sized ones, and it has demonstrated how crucial it is to maintain a consistent level of performance. The only way to guarantee that performance remains high over

time is to employ environmentally friendly techniques.

Organisational performance

Because ensuring that companies achieve their goals is the most crucial task of management, organizations as a whole need to understand the notion of organizational performance. Management, strategic planning, and objective assessments of staff performance are essential for businesses. To close the gap, businesses must use performance management strategies based on measurement and planning (Zhang et al., 2020). According to Barakat (2005), an organization's performance is the consequence of intricate interactions among its employees, procedures, resources, and machinery, as well as with their culture and the environment in which they work. Performance, in general, refers to how an individual, group, or object completes a task or activity. Performance can be measured and demonstrated in a variety of ways when it comes to researching businesses.

In this case, organizational, team, and individual levels are distinguished (Knies et al., 2016). The relationship between low cost and appropriate cost or economy, high cost and valued output, or efficiency among production and completed effectiveness is another facet of organizational performance (Chen & Barnes, 2006). Organizational performance, according to Lee et al. (2018), is the effort and activity of people to carry out and develop a certain task in a variety of ways; it completes work plans without infringing the law. The capacity to fulfill duties without violating any regulations is, in other words, organizational performance. According to Chuang and Huang (2018), environmental performance measures both environmental protection and the management of an organization's environmental effect. As a result, the standard ISO 14001:2004 for managing environmental systems includes a concept known as "environmental performance." Companies can

protect the environment by establishing environmental policies, objectives, and indicators.

Green HRM

In GHRM, an innovative managerial approach, human resource management receives a "green" makeover. According to Liu and Xie (2013), global human resource management (GHRM) refers to HRM methods and policies that consider the corporate environmental schedule. Wagner (2013) claims that GHRM is "a subset of sustainable human resource management, where the latter also addresses corporate social responsibility issues." By incorporating CSR into every aspect of the organization's human resources strategy, managers may significantly contribute to their company's transformation into a more socially and ecologically responsible corporation, according to the Global Human Resource Management Association (GHRM) (Alonso-Almeida et al., 2015). When HR managers have a thorough comprehension of the idea, CSR objectives may be achieved. The most crucial element in the effective application of green practices, according to Pea-Vinces and Delgado-Márquez (2013), is experienced and happy personnel. The GHRM practices improve firms' effectiveness while also improving employee well-being. GHRM improves the company's reputation in the market (Sarfraz et al., 2022).

These techniques can be utilized to enhance HRM capabilities in order to draw candidates interested in working for companies that value the environment. In order to incorporate environmentally conscious concepts into business operations, many companies consider that managers must have access to HRM practices (Jabbour et al., 2015). Businesses have the ability to increase "green innovation" and "green human capital" through making use of the knowledge, abilities, and experiences of their employees, according to Chen and Ching-Hsun

(2013). According to several experts, corporate citizenship practices in emerging economies are significantly impacted by green human capital (Alonso-Almeida et al., 2015). According to several academics, GHRM is influenced by four factors: green employees, green training, green performance reviews, and green rewards and recognition (Dubois and Dubois, 2012). We'll now discuss these four dimensions .

Corporate Social Responsibility (CSR)

These days, CSR is a critical topic for firms to consider. CSR initiatives have the potential to instill a sense of shared value and a positive reputation among an organization's numerous stakeholders (Kim et al., 2016). Corporate social responsibility (CSR), according to Gallardo-Vázquez and Sanchez-Hernández (2014), is "the idea that companies choose to help make their communities better and the environment cleaner on their own." Additionally, a business must invest more money in its connections with its stakeholders than is mandated by law if it wants to be considered socially responsible. "Corporate social responsibility," or CSR, is a business' continual dedication to uphold moral principles and support the sustainability of the economy and environment (Emma and Bevan, 2015). CSR is receiving greater attention from sustainable strategists because to its beneficial implications on a variety of issues, such as financial, social, and environmental ones (Agan et al., 2014). In today's very competitive market, corporate social responsibility (CSR) programs are one of the finest methods for firms to draw in and retain customers. Customers will feel more devoted to the business and be more inclined to spend more for its goods as a result (Wei et al., 2018).

Despite the fact that CSR is gaining importance in management research, many businesses struggle to integrate it into their management practices. No matter where they live—in a wealthy or a developing nation—this is true (Zhu and Zhang, 2015). Thus, the European Union

took a number of significant initiatives near the end of the 20th century to make CSR a natural element of company activities and support society's sustainable growth. However, Antoová and Csikósová (2015) assert that it is the responsibility of Slovak firms to address the issues that prevent the EU's CSR goal from being achieved. CSR issues must therefore be investigated in greater detail. This can be accomplished by integrating GHRM and CSEV into one framework. The interaction between GHRM and CSR is the responsibility of CSEV.

Theoretical review

Resource-based theory

The Resource-Based View (RBV) framework has been employed in the domain of sustainable management to evaluate the internal strengths and weaknesses of an organization, along with their correlation to performance and competitive advantage. The Resource-Based View (RBV) theory is a singular framework that can assist a business in determining the most effective technologies and practices to enhance production or processes. The resources encompass a range of elements such as competencies, techniques, instruments, expertise and data, structural attributes, and other factors that facilitate the development and implementation of efficacious strategies by an organization. Organizational aspects are considered as one of the additional resources. As per a scholarly investigation, the physiognomic resources in question are classified as VRIN, an acronym denoting their value, rarity, originality, and irreplaceability. Conversely, the Resource-Based View (RBV) solely takes into account the implications for enterprises while disregarding the influence that Sustainable Development (SD) has on the natural surroundings. A natural RBV (NRBV) was developed by a scientist in response (Salman et al., 2022). The concept of the Natural Resource-Based View (NRBV) enhances the applicability of the Resource-Based View (RBV) by elevating

the significance of environmental valuation. In alternative descriptions, it is referred to as "a conceptual framework that elucidates a corporation's competitive edge contingent on its interface with the surrounding ecological milieu." This is the manner in which it is delineated. This theoretical framework examines the relationship between the utilization of ecologically sustainable resources by an organization and its ability to achieve a competitive advantage and long-term success. According to ecologists and environmentalists, the adoption of Natural Resource-Based View (NRBV) has the potential to enhance a company's profitability.

According to Kuckertz et al. (2020), the COVID-19 pandemic has had a negative impact on global trade and tourism. The impact of human existence is significant across various domains, with health being one of the areas that is particularly affected in a detrimental manner (Sigala, 2020). Brown and Rocha (2020) The COVID-19 pandemic has inflicted significant harm upon various businesses and industries, prompting them to engage in a struggle to maintain their operations. Notwithstanding, certain enterprises have availed themselves of the opportunity to establish a fresh market, and a considerable quantity of small and medium-sized enterprises are adapting to the novel milieu (Bretas & Alon, 2020). The aforementioned citation is attributed to Bretas and Alon in the year 2020. Small and medium-sized enterprises (SMEs) are particularly susceptible to worldwide crises such as the COVID-19 pandemic due to their restricted resources. The citation provided is from a scholarly source authored by Utomo et al. in 2021. The citation provided is from a scholarly source authored by Utomo et al. in 2021. The citation provided is from a scholarly publication authored by Utomo et al. in 2021. The significance of sustainability has become increasingly paramount in the contemporary climate. However, it is imperative to note that

enduring survival strategies remain imperative (Mustafa & Abbas, 2021). Mustafa and Abbas (2021) conducted a study on a particular topic. The utilization of technology to modernize operations is increasingly imperative for small and medium-sized enterprises (Winarsih et al., 2021). According to Mustafa and Abbas (2021), the implementation of technology that incorporates or utilizes eco-friendly methods is beneficial to the industry. The present research aims to investigate strategies that small and medium-sized enterprises (SMEs) can employ to maintain their performance amidst the COVID-19 pandemic.

Stakeholder theory

The Stakeholder Theory (ST) posits that businesses are motivated to pursue ecologically responsible practices and attain sustainable and green development due to the influence and engagement of a significant number of stakeholders. This theory exhibits similarities with the stakeholder theory. For the company to achieve success, it is imperative to consider the requirements of all its stakeholders. The study's findings suggest that GOS and ECSR projects should be regarded as business ventures that seek to tackle the apprehensions of various stakeholders, particularly those who express unease about the condition of the worldwide environment and society. Companies are under pressure from stakeholders to adopt sustainable

OSP strategies, policies, and activities that are environmentally friendly. Both the Resource-Based View (RBV) and the Stakeholder Theory (ST) concur with the proposition that an enterprise that employs Green Operations Strategy (GOS) and Environmental Corporate Social Responsibility (ECSR) will utilize Green Technology Innovation (GTI) to manufacture environmentally-friendly products, thereby contributing to the growth of Organizational Sustainability Performance (OSP). According to the research findings, it has been demonstrated that the implementation of GTI is likely to result in an increase in OSP.

The rationale behind corporate investment in Environmental, Social, and Corporate Responsibility (ECSR) can be elucidated by the stakeholder theory. The stakeholder theory posits that an organization's capacity to achieve economic and non-economic objectives, including enhancing corporate social performance and maximizing profitability, is fundamental to its operational efficacy and financial viability (Pirsch, Gupta, & Grau, 2007). According to stakeholder theory, businesses ought to pursue objectives beyond maximizing profits. According to this theory, corporations that implement ECSR initiatives to promote socially responsible conduct and policies are more capable of satisfying the demands of their stakeholders.

Conceptual framework and hypotheses

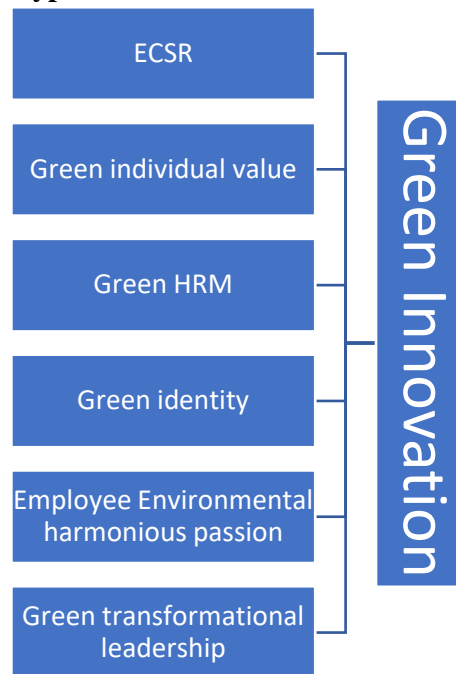


Figure 1 Conceptual framework

H1 – ECSR positively influences green innovation

H2 – Green individual value positively influences green innovation.

H3 – Green HRM positively influences green innovation.

H4 – Green identity positively influences green innovation.

H5 - Employee Environmental Harmonious Passion positively influences green innovation.

H6 – Green individual value positively influences green innovation.

Methodology

This section examines the different methods, plans, approaches, and resources used to accomplish the research. It covers the techniques utilized for data collection, the research design, the research methodologies used, the techniques used for data analysis, and the theories used in the study. The study's techniques, ideas, and

resources are connected to the topics of ECSR and green innovation. Below you'll find more information on the study's methodologies and data collection techniques.

Research Methods

There are numerous distinct study designs that can be used in studies, according to Grove, Burns, and Gray (2014). Correlational, descriptive, experimental, and quasi-experimental designs are a few of them. Hoe and Hoare (2012) claim that numerous textbooks categorize these various kinds of study designs in a wide range of ways. Many correlational and descriptive designs are regarded as non-experimental since they examine traits that occur in the environment spontaneously, according to Kamara (2013). According to Kamara (2013), the researcher places little emphasis on addressing these issues.

In addition to employing both primary and secondary sources, the researcher also conducted questionnaires to gather quantitative data for the study, and literature reviews to gather

secondary data. In order to gain a deeper understanding of the topic and the ECSR elements that support environmentally conscious innovation in businesses, secondary data collection was done (Trzesniewski et al., 2011). Textbooks, articles, and papers that focus on the topic are examples of secondary sources used to gather data. In order to gather information on the issue and shed light on the impact of ECSR on green innovation, key research papers on the topic were examined. Editorials, published author and researcher interviews, articles, as well as national and international media and periodicals, were also used in the research (Trzesniewski et al., 2011). The entire secondary data set was gathered with the intention of strengthening the study's foundation and understanding.

Research Methodologies

Research refers to the systematic and rigorous inquiry into various issues and problems,

employing recognized methodologies to generate new knowledge. The significance of research in the progression of science lies in its capacity to allow researchers to scrutinize and validate assumptions, facts, and environments. Through the process of validating and replicating the study, the researchers are able to consistently make contributions to the body of knowledge. The design of the study is informed by contemplation of various research methodologies and their respective areas of emphasis. The identification of appropriate research designs facilitates the utilization of methodologies and techniques that align with the research goals and augment dissemination.

The categorization of research can be broadly classified into three distinct types, namely theoretical, applied, and practical research, which are determined by the research's intended objectives.

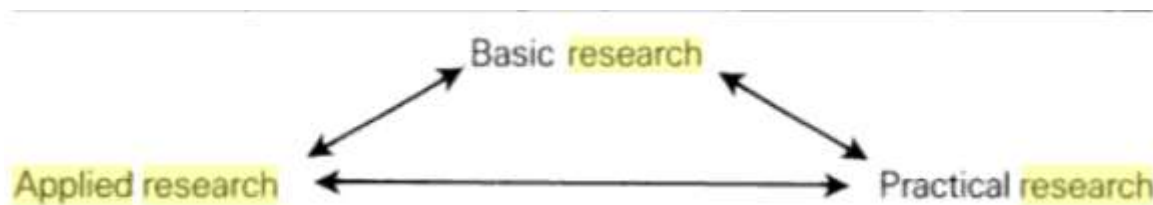


Figure 2: Types of research by purpose; Source: (Andrew et al., 2019)

Theoretical/Basic Research

The primary objective of theoretical research is the generation of knowledge, without consideration of any probable practical applications. The objective of collecting data is to acquire novel information and cultivate fresh viewpoints pertaining to a specific topic. The outcomes are frequently employed to formulate conjectures, as stated by Andrew et al. (2019). An instance that can be cited pertains to the universals of relative clauses. The primary objective of applied research is to offer practical solutions to specific problems. The generation of

scientific knowledge through practical means is facilitated by theoretical inquiry. According to Herbert et al. (1989), the acquisition order is a component of applied research. Applied research is utilized for the evaluation or development of programmes, policies, and processes.

The differentiation between theoretical and practical research is ambiguous as both possess theoretical implications. The application of research in practical settings can have a significant influence on the adaptation and development of theoretical frameworks. The utilization of data in the creation of products is

exemplified by the research conducted by Bajpai (2011). The aim of this study is to assess the policies, procedures, and practices of enterprises in promoting eco-friendly innovation within the framework of the European Company Statute Regulation (ECSR). Thus, the research methodology employed is of an applied nature as indicated by Bajpai (2011). While basic research is employed to contemplate specific issues, the results of practical research can aid enterprises in implementing optimal procedures. The study is of an applied nature as it seeks to establish a connection between the research question and the findings. The aim of this study is to comprehend the influence of ECSR on environmentally sustainable innovation. Conducting research with an explanatory aim allows the researcher to delve deeper into the topic, generate fresh inquiries, and explore innovative resolutions. The objective of this study is to gain a more comprehensive comprehension of the correlation between Employment Conditions and Social Relations (ECSR) and environmentally sustainable innovation. Acquiring a deeper understanding of the causality behind phenomena can facilitate the generation of feasible solutions to challenges.

Research design

Inductive and deductive research are the two main subtypes of research designs. The objective of inductive inquiry is to generalize the knowledge derived from particular observations. Inductive research includes gathering data with the aim of generating fresh hypotheses. Deductive reasoning is a type of reasoning that draws a specific conclusion from a set of broad principles that describe reality. The conclusion contributes to the solution of the research topic and is a crucial component of it. This paper uses logical reasoning and general principles to illustrate the topic, such as the effect of ECSR on green innovation. As a direct result of this essential principle, the concepts of ECSR and green innovations, as well as the nature of their

relationship, were developed. Deduction has various applications, but one of its most well-known benefits is that if the research's premises are true and the researcher's reasoning is strong, the research's conclusion will almost surely be accurate.

Techniques, tools, methods, instruments, devices

The methodology of a research project refers to the range of instruments, procedures, and methods employed in its data collection and analysis (Husni, 2020). You can discover details about the techniques and resources employed in the study here, along with information about the who, what, when, where, and why of the investigation. Pre-testing, validity, and reliability are just a few of the issues that are gone over in great length in this section. The research methodology describes how the research was conducted as well as how to do effective research. The methodology, methods, and approach that were employed for the research are explained in this section.

For a number of reasons, the researcher decided to employ survey questionnaires to gather data. First, using survey questions is an economical and effective technique to collect a lot of data from a wide range of people. Surveys can be distributed online, by mail, email, or in person, making it simple to reach a sizable and diversified participant pool. The same questions are posed to every participant in a survey in the same way, making it a standardized technique of data gathering (Groves et al., 2011). This makes it simple to compare and analyze the data gathered from various participants, improving the study's validity and reliability. Third, survey questions are an effective way to collect quantitative data that can then be examined using statistical methods. This is especially helpful for gauging factors like the extent to which ECSR is adopted by businesses and the degree of green

innovation inside those businesses. Fourth, survey questionnaires are helpful for gathering information on sensitive subjects because they allow for participant anonymity, which increases the likelihood that they will give truthful and accurate answers (Groves et al., 2011). Finally, the researcher can conduct and evaluate the data easily because survey questionnaires are simple to administer and interpret.

This inquiry was conducted using a descriptive methodology. Its main application is in the social sciences, where it is used to support the chosen course of action (Cakar and Aykol, 2021). Results from the investigation were contradictory. To ensure the validity of the study's findings and arguments, the researcher drew on data from both the present and the past. The surveys were conducted in order to gather information about ECSR and environmentally friendly developments. A Likert scale questionnaire with five data points was utilized to gather information from respondents for the research project. Additional sections of this section discuss the many techniques that can be used to analyze the findings. These are some of the techniques that were employed in this study to gather data and conduct analyses.

Data Collection

Given the diverse range of data collection methods available to researchers, it is imperative that they exercise discretion in selecting the most appropriate method that can yield reliable and accurate data. The study conducted by Montes-Rodriguez et al., (2019) is the subject of reference. Broadly speaking, data collection techniques can be classified into two main categories: qualitative and quantitative. The careful evaluation of data collection methods is a crucial aspect of conducting research. In the context of conducting a comprehensive inquiry, it is imperative to employ multiple techniques for gathering data and to evaluate the data utilizing a minimum of two to three distinct methodologies.

This study employed two distinct methodologies for data interpretation, both of which are expounded upon in the "Data Analysis" section. Researchers have access to various traditional data collection methods, such as interviews, observations, focus groups, questionnaires, and surveys.

During the data collection phase, Iriste and Katane (2018) conducted in-person surveys to gather primary data from the respondents. In order to gather quantitative data for the present investigation, the researchers employed the use of questionnaires. In order to attain the research objectives, a survey with closed-ended questions utilizing a 5-point Likert scale was developed. The study conducted by the researcher involved the administration of surveys to multiple commercial enterprises, encompassing both the managerial and employee levels. Prior to completing the questionnaire, all participants were provided with details regarding the research and the process of data collection. Following the creation of the questionnaire, a period of 3-4 weeks was dedicated to its development. Subsequently, the data was gathered with great attention to detail. Closed-ended questions facilitate the acquisition of primary data that can be presented in the form of both quantitative and qualitative data. To clarify, the acquisition of primary data facilitates the acquisition of current societal viewpoints regarding the research objectives. One of the primary benefits of collecting primary and secondary data was the capacity to acquire comprehensive knowledge about the subject of study. The utilization of primary and secondary data in the study serves to underscore noteworthy issues pertaining to ECSR and environmentally-friendly innovations. The collection of secondary data was deemed essential due to the subject matter under investigation.

Population and Sampling

Dobson et al. (2017) suggest that the selection of an appropriate sample size should be based on the requirements of the research topic and the researcher's specifications. The recommended range for the sample size is between 50 to 500 or more participants. Furthermore, the selection of the sample size ought to align with the researcher's specifications. Subsequently, 500 employees and supervisors were invited to participate in the survey. The qualitative component of the research involved the utilization of a minimum of 15 to 20 scholarly journal articles to facilitate the analysis of the empirical data and to elucidate the connection between the theories expounded upon in preceding sections and the evaluative appraisal of the observed outcomes. The purpose of this endeavor was to investigate the correlation between the theories expounded upon in preceding sections and the meticulous evaluation of the perceived outcomes, as posited by the research inquiry.

It is imperative to conduct an assessment of the dependability and accuracy of the research methodologies when selecting a sampling approach (Andrade et al., 2017). The term *Validus* in Latin carries the connotation of possessing significant power. The degree of sensitivity of a measuring instrument to the corresponding variable being measured. A survey instrument with open-ended questions was developed to attain the research goals. The examination was formulated with consideration given to the various aspects of the European Company Survey on Risk Management (ECSR) and environmentally sustainable innovations. To ensure the authenticity of the questions and statements posed, they were collaboratively formulated by the research project supervisor, technical committee members, and academic committee members. The initial questionnaire document was submitted to the supervisor with a

request for revision and improvement. The supervisor demonstrated a more comprehensive comprehension of the subject matter, despite its relatively expansive scope.

The cruciality of a research's reliability is emphasized by Holmes (2018). A positive relationship exists between the reliability and validity of a research questionnaire. Consequently, it is imperative for researchers to implement measures aimed at enhancing the reliability of the questionnaires and increasing the sample size. The assessment of the research instrument's reliability was conducted through the pretesting procedure. In the pretesting phase, a sample of one hundred respondents was gathered to assess the internal reliability of the system. The design of the questionnaire and the size of the sample facilitated the identification of topics pertaining to ECSR and green innovation. The trial test outcomes exhibited the dependability of the apparatus.

Data analysis

Data analysis tools are accessible in qualitative as well as quantitative formats. The present study employed both prescriptive and diagnostic methodologies for data analysis. The diagnostic analysis comprised findings from a survey administered to a sample of 500 managers and employees within firms. The utilization of prescriptive data analysis facilitated the researcher in establishing a correlation between literary perspectives and the proposed empirical framework, in addition to the empirical evidence gathered from prior research endeavors and published works. The researcher was able to establish connections by linking literary perspectives with the proposed empirical framework.

Ethical Considerations

The meticulous adherence to ethical protocols throughout the research inquiry was deemed a paramount factor in the present study. Prior to

engaging with the study participants, the researcher overseeing the current investigation provided assurances that all moral and ethical protocols would be strictly observed. Prior to the commencement of data collection, all participants completed individualized consent forms, thereby attesting to their voluntary participation in the study. The survey instrument was employed to gather diverse data sets, while the findings of previous inquiries were maintained confidential and solely utilized in the current research investigation.

Results

The results obtained from this investigation can be found in this section along with the details and explanations. First the results obtained through questionnaire are presented through regression and correlation analysis, followed by discussion. The results obtained for hypotheses can be found below:

Results to hypotheses

The results of each hypothesis can be found below:

H1 – ECSR positively influences green innovation

Table 1 results to H1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.534 ^a	.285	.284	.64163

a. Predictors: (Constant), ECSR

In the above table, it can be seen that value of R-square is 28.5%, which means that variable ECSR is moderately fitting the model.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	81.734	1	81.734	198.531	.000 ^b
	Residual	205.023	498	.412		
	Total	286.756	499			

a. Dependent Variable: GreenInnovation

b. Predictors: (Constant), ECSR

The results obtained in above table indicates that value of F and significance are both meeting hypothesis acceptance criteria because F is

greater than 1 while significance is less than 0.05. Hence hypothesis is accepted.

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	1.002	.085		11.847	.000
	ECSR	.572	.041	.534	14.090	.000

a. Dependent Variable: GreenInnovation

The coefficients table above indicate that both the value of t and Beta are positive which means that there is a positive relation between independent and dependent variable.

H2 – green innovation value positively influences green innovation.

Table 2 Results to H2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.606 ^a	.367	.366	.60373

a. Predictors: (Constant), GreenIndividualValue

In the above table, it can be seen that value of R-square is 36.7%, which means that variable green individual value is moderately fitting the model.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	105.242	1	105.242	288.738	.000 ^b
	Residual	181.515	498	.364		
	Total	286.756	499			

a. Dependent Variable: GreenInnovation

b. Predictors: (Constant), GreenIndividualValue

The results obtained in above table indicates that value of F and significance are both meeting hypothesis acceptance criteria because F is

greater than 1 while significance is less than 0.05. Hence hypothesis is accepted.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.794	.083		9.597	.000
	GreenIndividualValue	.650	.038	.606	16.992	.000

a. Dependent Variable: GreenInnovation

The coefficients table above indicate that both the value of t and Beta are positive which means that there is a positive relation between independent and dependent variable.

H3 – Green HRM positively influences green innovation.

Table 3 Results to H3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.615 ^a	.379	.377	.59814

a. Predictors: (Constant), GreenHRM

In the above table, it can be seen that value of R-square is 37.9%, which means that variable Green HRM is moderately fitting the model.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	108.585	1	108.585	303.501	.000 ^b
	Residual	178.172	498	.358		
	Total	286.756	499			

a. Dependent Variable: GreenInnovation

b. Predictors: (Constant), GreenHRM

The results obtained in above table indicates that value of F and significance are both meeting hypothesis acceptance criteria because F is

greater than 1 while significance is less than 0.05. Hence hypothesis is accepted.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.612	.091		6.731	.000
	GreenHRM	.694	.040	.615	17.421	.000

a. Dependent Variable: GreenInnovation

The coefficients table above indicate that both the value of t and Beta are positive which means that

there is a positive relation between independent and dependent variable.

H4 – Green identity positively influences green innovation.

Table 4 Results to H4

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.514 ^a	.264	.263	.65087

a. Predictors: (Constant), GreenIdentity

In the above table, it can be seen that value of R-square is 26.4%, which means that variable Green identity is moderately fitting the model.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.787	1	75.787	178.897	.000 ^b
	Residual	210.970	498	.424		
	Total	286.756	499			

a. Dependent Variable: GreenInnovation

b. Predictors: (Constant), GreenIdentity

The results obtained in above table indicates that value of F and significance are both meeting hypothesis acceptance criteria because F is

greater than 1 while significance is less than 0.05. Hence hypothesis is accepted.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.125	.080		14.022	.000
	GreenIdentity	.513	.038	.514	13.375	.000

a. Dependent Variable: GreenInnovation

The coefficients table above indicate that both the value of t and Beta are positive which means that there is a positive relation between independent and dependent variable.

H5 - Employee Environmental Harmonious Passion positively influences green innovation.

Table 5 Results to H5

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.909 ^a	.827	.827	.31572

a. Predictors: (Constant), Employee Environment Harmonious Passion

In the above table, it can be seen that value of R-square is 82.7%, which means that variable

Employee Environmental Harmonious Passion is perfectly fitting the model.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	237.116	1	237.116	2378.762	.000 ^b
	Residual	49.641	498	.100		
	Total	286.756	499			

a. Dependent Variable: GreenInnovation

b. Predictors: (Constant), EmployeeEnvironmentHarmoniousPassion

The results obtained in above table indicates that value of F and significance are both meeting hypothesis acceptance criteria because F is

greater than 1 while significance is less than 0.05. Hence hypothesis is accepted.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.212	.042		5.081	.000
	Employee Environment Harmonious Passion	.880	.018	.909	48.773	.000

a. Dependent Variable: Green Innovation

The coefficients table above indicate that both the value of t and Beta are positive which means that there is a positive relation between independent and dependent variable.

H6 – Green transformational leadership positively influences green innovation.

Table 6 Results to H6

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.542 ^a	.294	.292	.63763

a. Predictors: (Constant), GreenTransformationalLeadership

In the above table, it can be seen that value of R-square is 29.4%, which means that variable green

transformational leadership is moderately fitting the model.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	84.281	1	84.281	207.293	.000 ^b
	Residual	202.476	498	.407		
	Total	286.756	499			

a. Dependent Variable: GreenInnovation

b. Predictors: (Constant), GreenTransformationalLeadership

The results obtained in above table indicates that value of F and significance are both meeting hypothesis acceptance criteria because F is

greater than 1 while significance is less than 0.05. Hence hypothesis is accepted.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.944	.087		10.869	.000
	Green Transformational Leadership	.546	.038	.542	14.398	.000

a. Dependent Variable: Green Innovation

The coefficients table above indicate that both the value of t and Beta are positive which means that there is a positive relation between independent and dependent variable.

The results obtained through correlation analysis can be found in table below:

		Correlations						
		ECSR	GreenInnovation	GreenIndividualValue	GreenHRM	Greenidentity	EmployeeEnvironmentHarmoniousPassion	GreenTransformationalLeadership
ECSR	Pearson Correlation	1	.534**	.479**	.603**	.862**	.647**	.467**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	500	500	500	500	500	500	500
GreenInnovation	Pearson Correlation	.534**	1	.606**	.615**	.514**	.909**	.542**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	500	500	500	500	500	500	500
GreenIndividualValue	Pearson Correlation	.479**	.606**	1	.624**	.445**	.622**	.762**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	500	500	500	500	500	500	500
GreenHRM	Pearson Correlation	.603**	.615**	.624**	1	.617**	.702**	.550**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	500	500	500	500	500	500	500
Greenidentity	Pearson Correlation	.862**	.514**	.445**	.617**	1	.641**	.475**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	500	500	500	500	500	500	500
EmployeeEnvironmentHarmoniousPassion	Pearson Correlation	.647**	.909**	.622**	.702**	.641**	1	.593**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	500	500	500	500	500	500	500
GreenTransformationalLeadership	Pearson Correlation	.467**	.542**	.762**	.550**	.475**	.593**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	500	500	500	500	500	500	500

** . Correlation is significant at the 0.01 level (2-tailed).

Figure 3 Results to correlation

From the above figure, it can be seen that there is a positive correlation among all the variables. Correlation between ECSR and green innovation is 53.4%, correlation between green innovation and green individual value is 60.6%, Green HRM and green innovation is 61.5%, green identity and green innovation is 51.4%, employee environment harmonious passion and green innovation is 90.9%, while green transformational leadership and green innovation is 54.2%. Hence, all the variables have a strong and high relationship with the dependent variable, which is green innovation.

Discussion

The results here are compared with old studies and compared with them to show the final findings. In the first hypothesis, it is found that ECSR positively influences green innovation because survey results show this. These results are also supported by Irfan et al. (2022), who found that green innovation cannot be done without focusing on ECSR because ECSR is the

foundation of green innovation. Supporting the results, Lee et al. (2018) also claimed that ECSR is based on green innovation and that both variables are interrelated with each other. If anyone of them is left out, none of them will work.

Moving on to the second hypothesis result, it is found that green individual value positively influences green innovation. This result is supported by Tarigan et al. (2021), who claimed that green individual value depends on workers taking responsibility to adopt practices that are green. Hence, if green innovation is not focused by the management, the chances of successfully implementing green individual value would come down. Additionally, another study found that green values focus on taking personal responsibility for own impacts on the environment (Wong et al., 2012). Hence, both of the above studies support the results of this investigation.

Moving on to the third hypothesis, on the basis of which it is found that green HRM positively influences green innovation, Similar results were presented by Tang et al. (2017), who claimed that green HRM depends on the adaptation of green innovation principles, and if this is not done in an authentic manner, then green innovation cannot take place. Similarly, Basana et al. (2022) found that organizations having workers and rewarding policies based on green principles are found to have more green innovation as compared to those who follow traditional HRM practices. Therefore, both of the above studies support the same conclusion: green HRM positively influences green innovation.

Moving on to the fourth hypothesis, it is found that green identity positively influences green innovation because hypothesis is accepted. Similarly, the results obtained indicate that green identity is an important factor for green innovation and must be focused on by organizations. The results are similar to those of Ankaya and Sezan (2019), who found that the performance of organizations can be improved if they focus on improving their green identity. They found that companies known for their green identities had more green innovation, which makes them sustainable and good. Additionally, Albort-Morant et al. (2016) found that organizations that focus on the United Nations' Sustainability Development Goals (SDGs) are called green organizations." These organizations have a better green innovation platform because their products are based on green principles.

The fifth hypothesis claimed that employee environmental harmony and passion positively influence green innovation. This result was supported by Huang et al. (2019), who found that organizations with an environment that focuses on green innovation produce more green products than others. Additionally, Ahmad et al. (2021) found that in order to become a green innovative

company, it is necessary that employee environmental harmony and passion be brought in by the management because, without it, green innovation cannot take place. However, limited investigations on this variable have been done; hence, more should be conducted so that arguments can be further validated.

Moving on to the last hypothesis of this investigation, it is found that green transformational leadership positively influences green innovation. This result is supported by Ankaya and Sezen (2019), who claimed that green individual value is positively associated with green innovation because if green individual value is not focused on by the management, green innovation cannot be brought in. Similarly, Lee et al. (2018) claimed that green individual value is the backbone of green innovation and that it must be discussed in the first meeting when green innovation is being brought into the company. Due to this reason, all the studies support the argument that individual green value is associated with green innovation.

Conclusion

In this investigation, the researcher aimed to find the relationship between ECSR and green innovation by taking many other variables into consideration. In recent times, ECSR has become a hot topic, along with green innovation for the long-term sustainability of organizations. Data collection in this investigation was done with 500 participants from different organizations that were found to be associated with green innovation and had its knowledge. A closed-ended questionnaire was used for this investigation based on a Likert scale questionnaire. The results were analyzed using regression and correlation analysis in SPSS. The results obtained indicate that all the variables investigated are positively influencing green innovation. The variables taken into account in this study are ECSR, green individual value,

green identity, EEHP, and green transformational leadership.

It is recommended that organizations follow all these practices in their organizations because they will directly influence organizational performance. If green innovation is to be brought into an organization, it is important that they focus on all the variables involved in this investigation because previous studies also presented similar results. However, most of the organizations might find it hard to achieve green innovation unless their plan is robust and long-term.

For future studies, the researchers should conduct interviews and ask in detail about how and what benefits can be achieved by focusing on all these variables. Additionally, they should recommend some methods through which green innovation can be improved practically. The future investigations should present case studies of different organizations that adopted green innovation and explain how they did this.

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