

The Role of Employee Engagement and Corporate Social Responsibility in Promoting Sustainable Development Goals within Organizations

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Abstract: Researching the impact of employee engagement and Corporate Social Responsibility (CSR) on the Sustainable Development Goals (SDGs) is an emerging field. This paper examines the effects of employee engagement facets and CSR activities in organizations and how they contribute to implementing sustainability in business. This work shows the connections between employee engagement and the impact of CSR and advocacy of the SDGs on value. Employees engage in activities to promote CSR within their work and sustain their organization's focus on implementing sustainability goals. Activities to encourage qualitative surveys and conversations within the frameworks of the cross-section of industries on the employees and management, and their effects on the advocacy for engagement and sustainability on the SDGs and the perceived CSR frameworks of engagement. By integrating CSR into the business operations of an organization, employee motivation, retention, and productivity have improved, contributing to the achievement of the SDGs. By integrating CSR into the business operations of an organization, employee motivation, retention, and productivity have improved, contributing to the achievement of the SDGs. To enhance the impact of intrinsic employee engagement on the organization's social responsibilities, advocacy for sustainability practices was implemented. Inclusive and participatory CSR frameworks were suggested.

Keywords: Employee Engagement, Corporate Social Responsibility, Sustainable Development Goals, Organizational Commitment, CSR Strategies, Sustainability.

Introduction

In an effort to develop a more sustainable future and to integrate their business activities with the SDGs, enterprises and their business sectors are rapidly changing to meet the needs of the 2030 Agenda [13]. Recently, the SDGs have become a business "buzzword" and for good reason. Sustained and inclusive global growth, social equity, and environmental protection are becoming climate change (and global economic) imperatives. However, only the adoption of CSR functional policies cannot drive changes. Employees must also apply (or allow) changes to be made to the business [2]. In this context, the impact of employee engagement, attitude, and motivation on an organization becomes increasingly relevant to business sustainability [14]. Employees will be engaged to the extent that incorporate the initiatives of sustaining corporate social responsibility (CSR) into their daily activities and exceed their primary responsibilities [1].

Integrating Social Responsibility (CSR) initiatives into business strategy falls within the realm of business ethics [7]. While it is easy to criticize, a large business will be more profitable by acting within the frameworks of social,

economic, and environmental equity and justice. It will also come with reputation value and financial sustainability [8][20]. For the SDGs' global initiatives on inequality, environmental stewardship, and economic growth, achieving "strong and durable" global economic growth is imperative.

Nonetheless, there is considerable evidence that the effectiveness of top-down CSR initiatives depends on the involvement of employees throughout the hierarchy [16]. Employees are more likely to engage with an organization and participate in CSR activities when can feel an emotional and professional attachment to it [9]. This significantly expands the reach and impact of these activities.

Despite the ultimate importance of employee engagement, CSR sustained employee engagement, and the interrelationship among these three components of organizational, social, and business performance, especially under the SDGs, empirical inquiries remain quite scarce [12]. There exists a positive engagement performance circle and an equally positive engagement-CSR circle. Nonetheless, the mechanisms through which engagement operates on CSR and, consequently, on the attainment of SDGs are still under-researched. This paper attempts to fill the existing gap by establishing the effectiveness of engaged employees on CSR activities that target the SDGs and are aimed at organizationally defined sustainability [10][11].

The objective of the research is to correlate employee engagement to the effectiveness of CSR activities and to the effectiveness of organizationally defined sustainable development. The study will focus on organizational practices within and across disciplines and industries to isolate key variables that improve employee engagement on CSR and the resultant organizational benefits of that engagement. These findings will better inform the business case for fostering a sustainable organizational culture through employee engagement and social responsibility [17][18]. This research will demonstrate that the attainment of SDGs is a collective business responsibility and that employees must be engaged to integrate CSR activities and organizational socially responsible practices.

Key Contributions

- This paper analyzes how engaged employees improve CSR activities, which in turn propel organizational sustainability and progress towards the SDGs. As such, the paper underscores the importance of employee engagement on the interconnectedness of sustainability.
- This paper documents how organizations with empowered and engaged employees attain CSR effectiveness, with improvements in organizational sustainability and alignment with the SDGs.
- This paper illustrates how organizations designed and executed with inclusive and participatory CSR activities, and employee engagement integrates organizational impact on global sustainability.

This study has been organized as follows. Section I outlines the importance of aligning organizational activities with the United Nations' Sustainable Development Goals (SDGs), recognizing the importance of employee engagement in fostering CSR activities that are aligned with organizational sustainability. Section II analyzes the literature in the domain of CSR and employee engagement by noting that the more engaged an employee is, the more are inclined to take part in CSR activities which aids in achieving the SDGs. Section III describes the mixed-methods approach, where, to study the linkage between employee engagement and CSR activities, qualitative surveys and interviews with employees and management across sectors were undertaken. Section IV discusses the findings derived from a combination of qualitative and quantitative assessments, which provide evidence that employee engagement enhances the effectiveness of CSR and aids in the realization of the SDGs. Finally, Section V outlines the findings and proposes more participatory CSR practices, theorizing the need for future studies to look at the impact of employee engagement on the sustainability of corporate practices.

Literature Survey

The growing attention Corporate Social Responsibility (CSR) receives on social, academic, and business fronts is attributed to its potential to address social, environmental, and economic issues. Responsible business practices go beyond simply generating profit. Businesses that practice corporate social responsibility (CSR) seek to make a positive difference within the community and the ecosystem [3]. Emission reduction, workplace diversity, community involvement, and ethical business practices are examples of positive actions. Although socially responsible business practices have been part of business ethics for a longer time, only lately have started to be integrated along with the global sustainability calendar and especially with the United Nations' Sustainable Development Goals (SDGs)

[15][19]. The SDGs incorporate a comprehensive plan for global sustainability and place sustained and growing pressure for businesses to incorporate and implement CSR policies.

On the contrary, the other side of the coin is that actively disengaged employees might be even more counterproductively than (in)actively engaged employees. Employee engagement is a chief component of organizational performance [6]. Engaged employees also contribute to the enthusiasm, dedication, and discretionary effort towards the target goals of the firm, and, collectively, increase the productivity, job satisfaction, and employee retention [4]. Major engagement factors include goal alignment at the individual and organizational levels, and distributive and relational aspects of leadership and compensation structures.

Considering the increased attention of employees on social concerns, the alignment of employee value systems with organizational frameworks, especially with respect to CSR and sustainable business practices, is emerging as a key driver of engagement. Employees who perceive their organization as a positive contribution to the social order tend to be more motivated and committed to their work. This engagement–CSR relationship is particularly notable due to the potential of employee-centred CSR practices to galvanize engagement with the organization, as well as a social and environmental commitment.

Over the past decade, scholars have advanced the study of corporate social responsibility (CSR) in particular more than in any other area of business ethics. Every year, reputable journals publish more than 100 articles on the business ethics of CSR. Interest in CSR extends beyond business ethics, as many other disciplines focus on CSR, and a plethora of articles and books on CSR have been produced in the area of social work as well. Other disciplines focusing on CSR include public administration, where the responsibility, accountability, and ethics of public administrators are analogous to CSR. Although the focus of the ideology of CSR is on corporations, it is important to highlight that international organizations and government bodies also engage in CSR [5]. Unlike businesses, the CSR of international organizations and government bodies is more focused on the social aspects of the communities in which will operate. However, all types of organizations, whether businesses, international organizations, governments or public administrators, engage with stakeholders through CSR, and the ethics of those engagements are the focus of business ethics.

Employees who are engaged take part in these initiatives and promote the organization's CSR activities both inside and outside the company, representing the organization's values and practices in sustainability. The retention of employees is also tied to CSR engagement. Organizations with developed CSR practices are viewed as ethically and socially responsible, providing them with competitive advantage, particularly to employees of younger generations such as millennials and Gen Z, who emphasize this attribute highly in their employment search. Employees with higher engagement scores are more likely to stay with organizations, thus reducing turnover and increasing the loyalty and commitment of the entire team. The intertwined nature of CSR and employee engagement allows for the construction of a resilient and dedicated workforce while still meeting the needs of society.

Though there has been some focus in the literature on CSR and employee engagement, the specific ways in which engagements assess the outcomes of CSR is still not well understood. While the impact of CSR on employee engagement is well documented, the impact of employee engagement on the effectiveness of CSR activities is less examined, especially in relation to the SDGs. This is especially important because organizations are interested in determining the impact of their CSR activities on global sustainability. Also, much of the research has been concerned about the broad relationship between CSR and engagement, while there is limited understanding on how this relationship might be used to advance the SDGs.

The direct relationship between CSR and the SDGs in the organizational scope, despite research demonstrating CSR's influence on organizational success and reputation, is still emerging. Organizations that integrate their CSR efforts with the SDGs are much better equipped to tackle some of the world's most critical challenges, including climate change, inequity, healthcare, and poverty. The extent to which employee engagement facilitates this, however, is still not well understood.

By looking at the role of engaged employees in the organization's CSR activity toward achieving the SDGs, one gains insight into how the internal culture of the organization can be harmonized with global efforts toward sustainability. There is a significant amount of literature concerning the relationship between engagement in CSR and the strategic role of employees, with the result that CSR activity tends to increase and organizations perform more effectively. The ways in which disengaged employees may negatively impact organizational CSR's influence on attaining the SDGs,

in particular, is a research gap. Responding to this gap, the current article addresses how organizations may advance global sustainability objectives by adopting an employee-focused approach within their CSR activity.

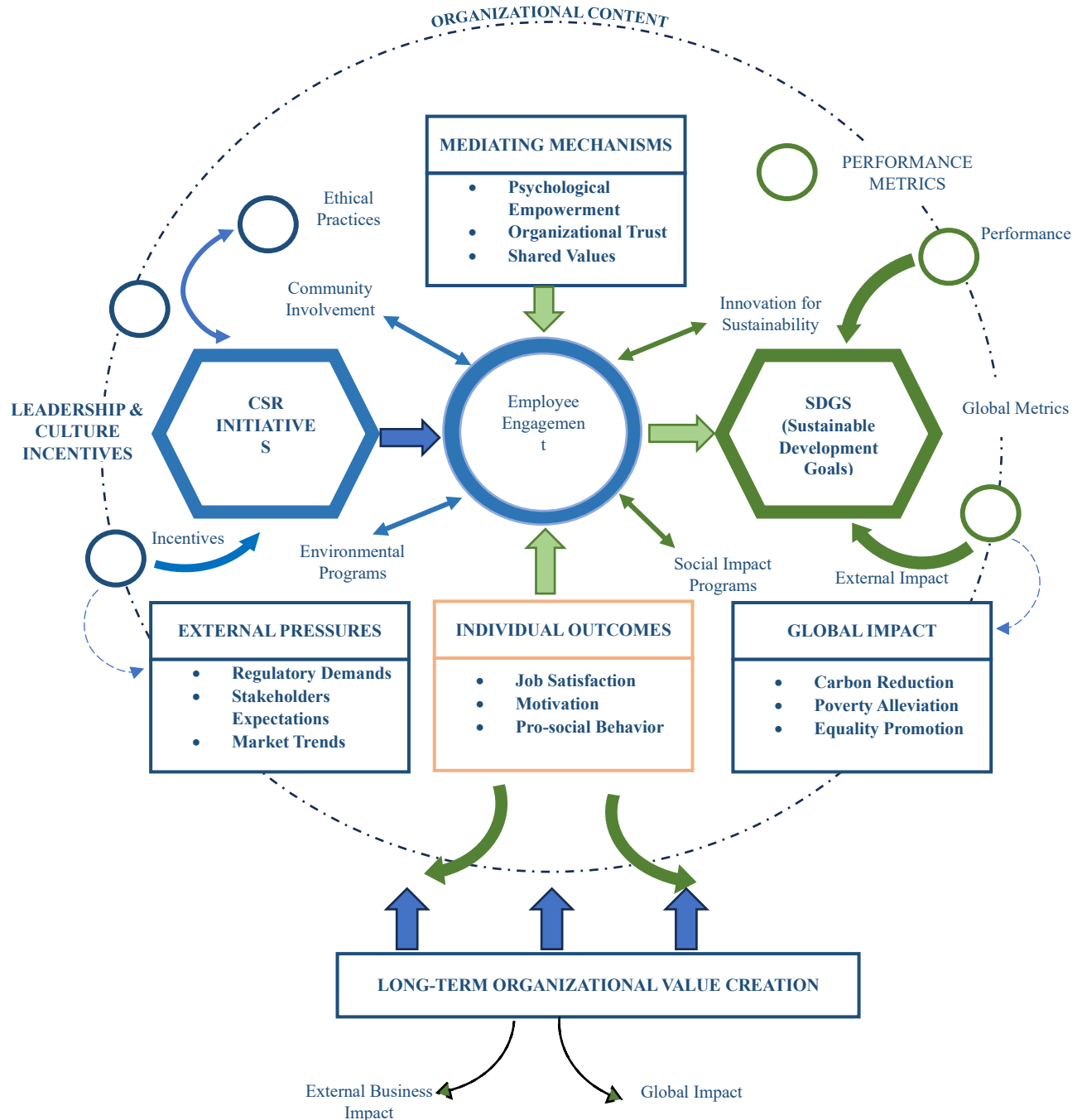
Methodology

In the organization, employee engagement along with perception on CSR and participation in CSR initiatives on different levels. The designed qualitative and quantitative question in the framework on engagement aimed at dimensions of motivation, organizational commitment, satisfaction, and the influence of CSR on change was coupled with employee engagement as a framework to be used in the qualitative data analysis of the survey work on. Development of the qualitative survey was complemented with interviews of managers and CSR coordinators to establish the organizational perception on employee engagement in CSR and the perceived impact of CSR. Furthermore, for contextualization purposes, secondary data such as CSR reports, employee feedback, and organizational performance reports are analyzed, processed, and incorporated. For the qualitative data, thematic analysis is used as well as statistical data methods, including regression analysis and correlation tests to assess the relationship between employee engagement and the outcomes of CSR activities.

The figure 1 in this study illustrates a model's reconciliation of the different consequences of employee engagement on the different levels of transformational sustainability of the organization, while also outlining the mediation influence of CSR in relation to the SDGs. Psychological empowerment, organizational trust, and shared values are the foremost engagement driving employee engagement the framework depicts. Engagement on this level also yields satisfaction, rate difference motivation, and pro-social behavior work at the individual level in value creation of the organization in the long term. The framework also illustrates the organization's culture and practices, and the phenomenon of sustainability relating to external demands, organizational performance in relation to global initiatives and impacts such as reduction of carbon footprints, poverty, and sustainability.

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Figure 1: Comprehensive Conceptual Framework: Employee-Driven Sustainability Transformation



Methods and Materials

This study utilizes qualitative and quantitative methods to understand how employee engagement with Corporate Social Responsibility (CSR) initiatives impacts the promotion of the Sustainable Development Goals (SDGs) within organizations. The research begins with a qualitative approach, employing interviews and surveys with employees and management in several industries. Organizations with prominent CSR initiatives are selected using purposive sampling to provide rich data on the integration of CSR into day-to-day practices and the operational engagement and perceptions of employees regarding CSR initiatives.

Sample Size and Data Sources

The research employed a mixed-method study with both primary and secondary data. The quantitative part involved survey feedbacks of 500 employees working in five organizations that are actively involved in CSR activities. To address the qualitative part, 25 employees, and 10 participants at the managerial level were interviewed to learn more about the employee engagement and CSR practices. Moreover, there was the inclusion of secondary data of 5 corporate CSR and sustainability reports acquired in the participating organizations, including annual CSR disclosures and sustainability performance reports. These data sources were used to provide a wide range of information regarding the CSR activities, employee involvement, and how the organization aligned against Sustainable Development Goals (SDGs). The chosen sample size was found to be sufficient to guarantee the statistical soundness and significant interpretation of connections between variables. The quantitative sample gives adequate representation among organizations and the qualitative sample size was established based on thematic saturation where no new important information was found with more data. The triangulation of data due to the presence of various CSR reports also increases data validity.

Mitigating Internal Biases in Data Collection

A number of strategies were used to reduce internal biases in the collection of data. To begin with, to exclude those organizations not engaged in Corporate Social Responsibility (CSR) activities, purposive sampling was applied to identify those that were actively engaged in CSR initiatives which made the sample representative of companies that had established CSR programs. Moreover, the data were collected anonymously to promote truthful and fair answers especially when conducting employee surveys and interviews. To preserve the integrity of the data, the qualitative part involved neutral and non-leading interview questions to prevent directing the participants in their answers. Moreover, data triangulation, i.e. using a combination of employee surveys, CSR reports, employee and management interviews, was used to verify the validity of the findings. This cross-method design made result cross-validation possible and reduced the potential bias due to the use of only one data source. Both thematic coding (through the NVivo) of qualitative data and statistical (via SPSS) analyses of quantitative data were used to conduct the analysis with the understanding that the outcomes of the two approaches should complement and reinforce one another. This holistic strategy aids in making sure that the conclusions made are reliable and objective.

Mathematical Model

The subsequent mathematical models quantify the relationships among the three variables of employee engagement, CSR initiatives, and SDG results. Such models unlock the possibilities of empirical assessment of the collected data and provide a foundation to value the effect of employee engagement on the effectiveness of CSR.

Correlation between Engagement and CSR

$$\text{Corr}(EEI, CSR) = \frac{\sum_{i=1}^n (EEI_i - \overline{EEI})(CSR_i - \overline{CSR})}{\sqrt{\sum_{i=1}^n (EEI_i - \overline{EEI})^2 \sum_{i=1}^n (CSR_i - \overline{CSR})^2}} \quad (1)$$

As stated in Equation (1), the Pearson correlation coefficient between employee engagement (*EEI*) and *CSR* initiatives are calculated here. A strong positive correlation means that the employee engagement is more impactful alongside the *CSR* initiatives that are more effective.

Regression Model for Predicting SDG Contribution

$$SDG_{predicted} = \alpha + \beta_1(EEI) + \beta_2(CSR) + \epsilon \quad (2)$$

Equation (2) predicts the extent to which SDGs are achieved, based on employee engagement and *CSR* activities. In this context, the coefficients β_1 and β_2 are the contributions of employee engagement and *CSR* activities, respectively, and ϵ is the error term.

Employee Engagement Contribution to CSR (EEC-CSR)

$$EEC_{CSR} = \gamma_1(EEI) + \gamma_2(CSR) + \eta \quad (3)$$

This equation (3) quantifies the impact employees' engagement contributes towards the effectiveness of CSR. It assesses the extent to which engagement of employees influences the achievement of CSR activities in an organization.

Predicting SDG Impact Based on CSR and Employee Engagement (SDG-Impact Model)

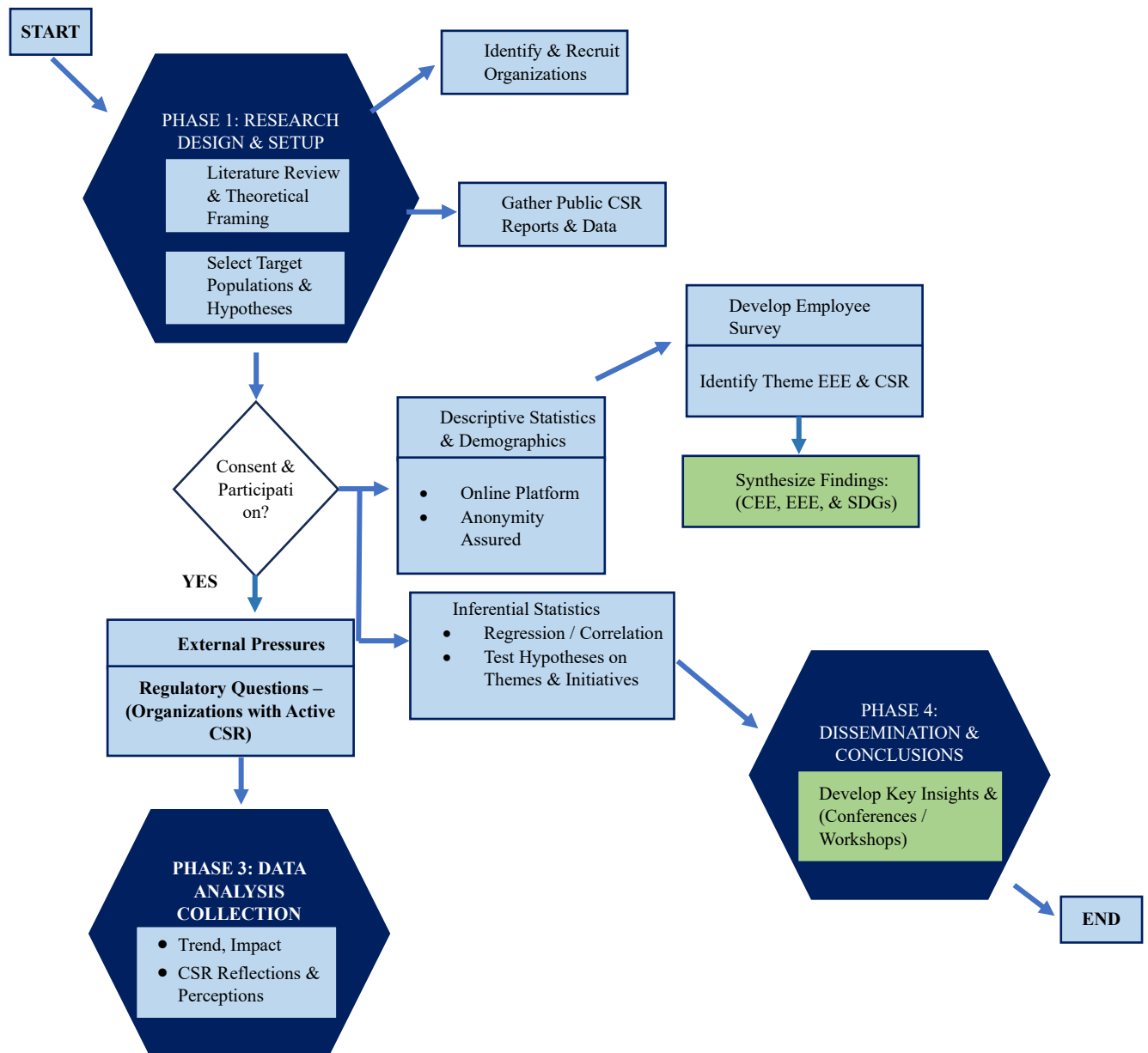
$$SDG_{Impact} = \delta_1(EEI) + \delta_2(CSR) + \delta_3(EEC_{CSR}) + \nu \quad (4)$$

This equation (4) predicts the expected impact on SDG achievement based on employee engagement and CSR efforts.

The figure 2 describes a systematic framework for researching the intersection of Corporate Social Responsibility (CSR) practices and the Sustainable Development Goals (SDGs). The first part, Phase 1: Research Design & Setup, involves the literature review, theoretical framing, and the target population and hypotheses selection. Organizations are located and recruited, public CSR reports are collected, and participation consent is obtained. In Phase 2: Data Analysis & Collection, survey descriptive statistics are collected, with a confidentiality guarantee to the respondents. External pressures are acknowledged, particularly regulatory ones, and CSR theme analysis is performed using inferential statistical techniques, including regression and correlation. In Phase 3: Synthesis of Findings, data is synthesized to provide insights on the dynamics between CSR and SDGs, focusing on the environmental, economic, and social development dimensions. The last part, Phase 4: Dissemination & Conclusion, is focused on articulating the main contributions and disseminating them at conferences and workshops, thereby closing the research cycle. Such meticulous CSI research undoubtedly articulates CSR's part towards enabling the SDGs.

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Figure 2: Research Process Flowchart for CSR and SDG Integration



Results and Discussion

Software & Tool Analysis

For this study, several statistical methods and computer programs were analyzed to manage and interpret the data received through the surveys, interviews, and secondary data sources. Predominantly, SPSS (Statistical Package for the Social Sciences) software was utilized for the statistical analytical purposes, which then guided the application of different regression models, correlation analyses, and descriptive statistical analyses. The researcher regarded NVivo as most valuable for thematic analysis of qualitative differences and patterns in employees' engagement and

perceptions of workers' CSR initiatives. NVivo also assisted in the organizational and relational structuring of raw textual data in the organizational context of scholarly initiatives on CSR. The advanced statistical analysis and mathematical modeling for the study utilized the integration of MATLAB tools as the study simulation and regression modeling software. MATLAB simplified the process of performing several iterations of a model and assessing various parameters through the evaluation of built-in functions and determining model relevance for a specific study objective. These techniques provided a comprehensive foundation for determining the effectiveness of various CSR initiatives as it relate to workplace engagement and overall progress toward the SDGs. Regression modeling and visualization of the relationship between Employee Engagement (EE), CSR Effectiveness and SDG Achievement were done in MATLAB. The functions that were applied to input data (EE, CSR, and SDG scores of 500 samples) were regress() and plot. Regression coefficients and error terms were the parameters of the model. The resultant outputs are scatter plots (Figure 4), lag plots (Figure 5), and comparative visualizations (Figure 3), that confirm the positive correlation found in the statistical analysis.

Dataset Details

The analysis of this dataset relied on two primary sources: feedback provided through employee surveys and corporate social responsibility (CSR) reports issued by the organization. The employee surveys analyzed responses from five CSR-oriented organizations, which encompassed 500 employees. The surveys gauged employee engagement, level of participation in CSR activities, and their perceptions of CSR activities. To measure engagement, employees were asked to respond to Likert scale questions with the range of “Not Engaged” to “Highly Engaged” as well as open-ended questions to describe the nature of their involvement in the CSR activities. Also, secondary data was used, which was derived from the organizations' CSR reports. The CSR reports contained relevant information regarding the scope of their CSR activities, scale, and outcomes, as well as the CSR activities alignment to SDGs. CSR reports contained empirical data like the total investment in CSR activities, average employee- volunteer hours, and the measures of social and environmental impact the outcomes of the CSR activities. Lastly, the data set placed the organizations in the context of publicly available CSR information relevant to SDGs like published progress reports and sustainability measurements, to analyze correlation between employee engagement and the impact of CSR activities on promoting SDGs. It also examined how organizational sustainable development goals are influenced by the participation of employees in CSR initiatives.

Metrics-Based Equations

This section outlines the fundamental metrics for evaluating the impact of employee engagement, the Corporate Social Responsibility (CSR), and the progress of Social Development Goals (SDGs). This study presents the current metrics and best practices for driving organizational sustainable development, framed within global and organizational research benchmarks. The table below summarizes the description of these metrics and juxtaposes performance metrics based on global benchmarks and best organizational practices.

Table 1: Metrics for EE, CSR, and SDG Outcomes

METRIC	DESCRIPTION	GLOBAL BENCHMARK	ORGANIZATIONAL BENCHMARK
Employee Engagement Index (EEI)	Measures the percentage of employees actively engaged in their work.	Global Average (2023): 21%	Best-Practice Organizations: 70%
		U.S. Average (2023): 31%	Top Companies (2025): 88%
CSR Effectiveness Index	Assesses the impact and outcomes of CSR initiatives.	Average CSR Spending (India, 2024): ₹2,707.54 crore	Top CSR Spenders (India, 2024): Maharashtra ₹6,065.95 crore, Gujarat ₹2,707.54 crore
SDG Achievement Index (SAI)	Evaluates progress towards achieving Sustainable Development Goals (SDGs).	Top Countries (2023): Finland (87.02), Sweden (85.74), Denmark (85.26)	Top Companies (2023): Leading companies in Nordic countries

Table 1 shows the key metrics for organizations to track and measure their performance for improvement: the Employee Engagement Index (EEI), the CSR Effectiveness Index, and the SDG Achievement Index (SAI). The Employee Engagement Index assesses the share of the workforce that is fully participating and is engaged in their roles, which in 2023 was 21% worldwide, and 31% in the U.S., while “best-practice” organizations strive for 70% fully engaged and “top” organizations set their goal for 88% engaged employees by 2025.

The CSR Effectiveness Index measures the impact and outcome of social corporate responsibility initiatives, with estimates for India’s CSR expenditure reaching ₹2,707.54 crores in 2024 which is heavily contributed by Maharashtra and Gujarat. The SDG Achievement Index assesses progression towards the United Nations Sustainable Development Goals (SDGs), with the highest scores, 85 and above, of Finland, Sweden, and Denmark. These benchmarks provide organizations an opportunity to define and assess performance in relation to global standards, thus facilitating goal-setting, strategy formulation, and planning for enhancements. This guarantees the organization’s performance in Employee Engagement, Social Responsibility, and Sustainability remains competitive within the bounds of their sector. Furthermore, within the Sustainable Development Goals, these benchmarks provide the needed context to help organizations refine their operations.

Employee Engagement Index (EEI)

$$EEI = \frac{\sum_{i=1}^n E_i}{n} \quad (5)$$

The total employee engagement in the organization is calculated in Equation (5). This is computed as the mean of engagement score of all employees who were surveyed. The higher the score of the Employee Engagement Index (EEI), the more engaged the employees are likely to be which is hypothesized to improve the CSR performance of the organization.

CSR Effectiveness Model (CEM)

$$CEM = \alpha(CSR_i) + \beta(EEI_i) + \epsilon_i \quad (6)$$

Equation (6) evaluates the effectiveness of CSR initiatives in promoting the organization’s internal SDGs. Here, the variables CSR initiatives (CSR) and employee engagement EEI are posed as independent variables. The parameter α measures the impact of CSR practices, and β measures the impact of employee engagement. The error term ϵ_i represents the unexplained and the unknown.

SDG Achievement Index (SAI)

$$SAI = \sum_{k=1}^m SDG_k \times W_k \quad (7)$$

Equations (7) analyzes how far the organization has progressed towards the achievement of the SDGs. This index is the product of every individual score of the SDG_k and the corresponding weight W_k attributed to each SDG as per the organizational priorities. The organization’s contribution to the sustainable development goals is reflected in the composite score that results from the weighted sum.

Figure 3: Stacked Bar Graph of Employee Engagement, CSR Effectiveness, and SDG Achievement

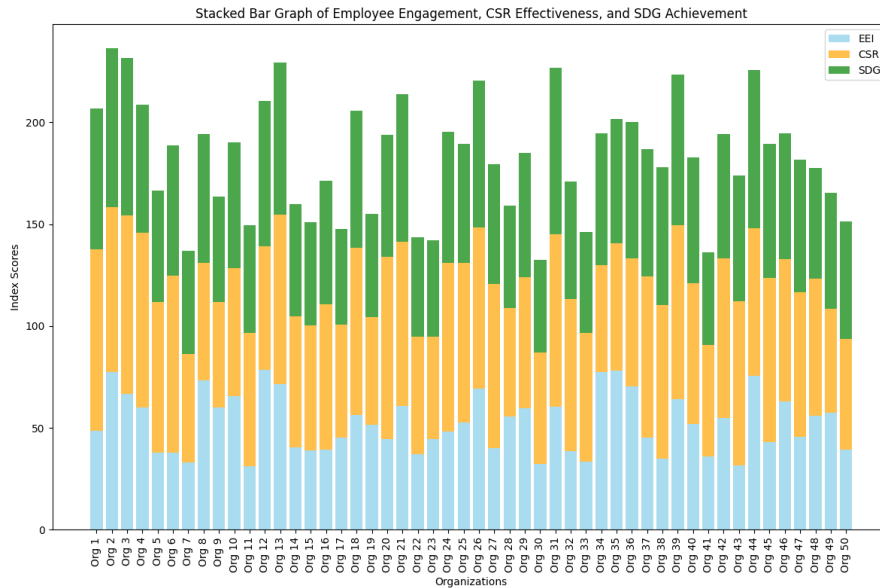
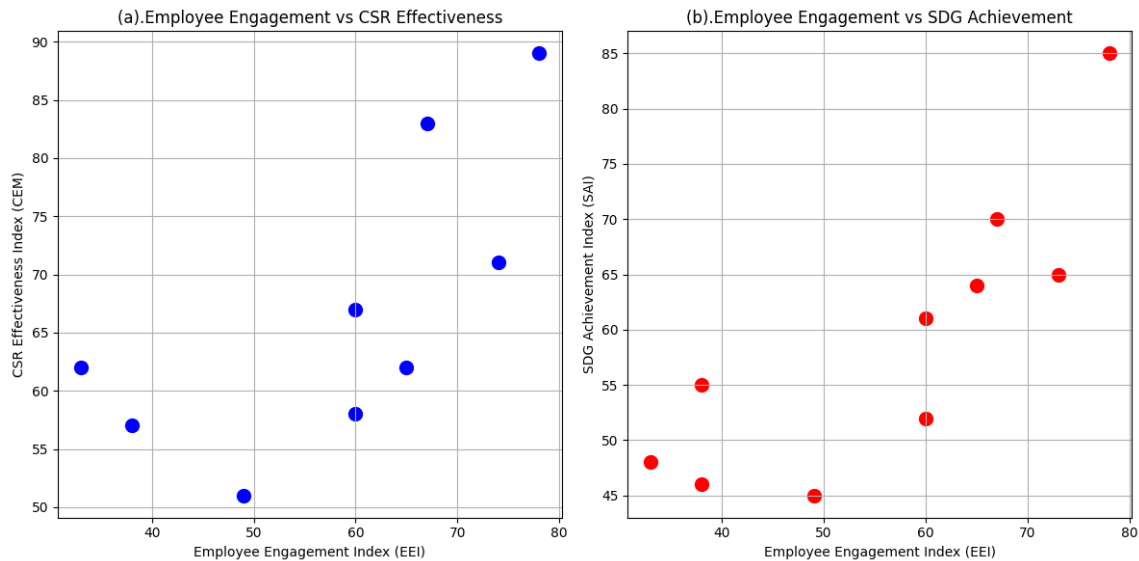


Figure 3 shows that organizations with higher Employee Engagement Index (EEI) also demonstrate higher CSR Effectiveness and SDG Achievement, indicating a balanced and integrated sustainability approach. Each organization is indicated by a single bar broken vertically into three segments and colored respectively: EEI is colored blue, CSR is orange, and SDG is green. The scorecard displays how each element contributes to the total score, showing the balance each organization attains among employee engagement, social responsibility, and the sustainable development goals. This graph illustrates the organizations' performance across multiple dimensions of employee engagement, social responsibility, and sustainability which helps to achieve the overall organizational goals.

Figure 4: Employee Engagement vs CSR Effectiveness and SDG Achievement



In figure 4 scatter plots indicate a strong positive relationship between Employee Engagement and both CSR Effectiveness and SDG Achievement, confirming that higher engagement improves sustainability outcomes. The figure 4(a) shows a CSR Effectiveness Index (CEI) value against the Employee Engagement Index (EEI) value showing a positive trend where organizations with higher employee engagement attain more effective CSR results. In the same way, the figure 4(b) shows the relationship between the EEI and the SDG Achievement Index (SAI) and

shows a positive correlation where higher employee engagement is associated with more progress attained toward the achievement of the Sustainable Development Goals (SDGs). In general, the figure shows that employee engagement is a key driver of corporate social responsibility and the sustainable development activities of the organizations.

Figure 5: Lag Plots of Employee Engagement, CSR Effectiveness, and SDG Achievement

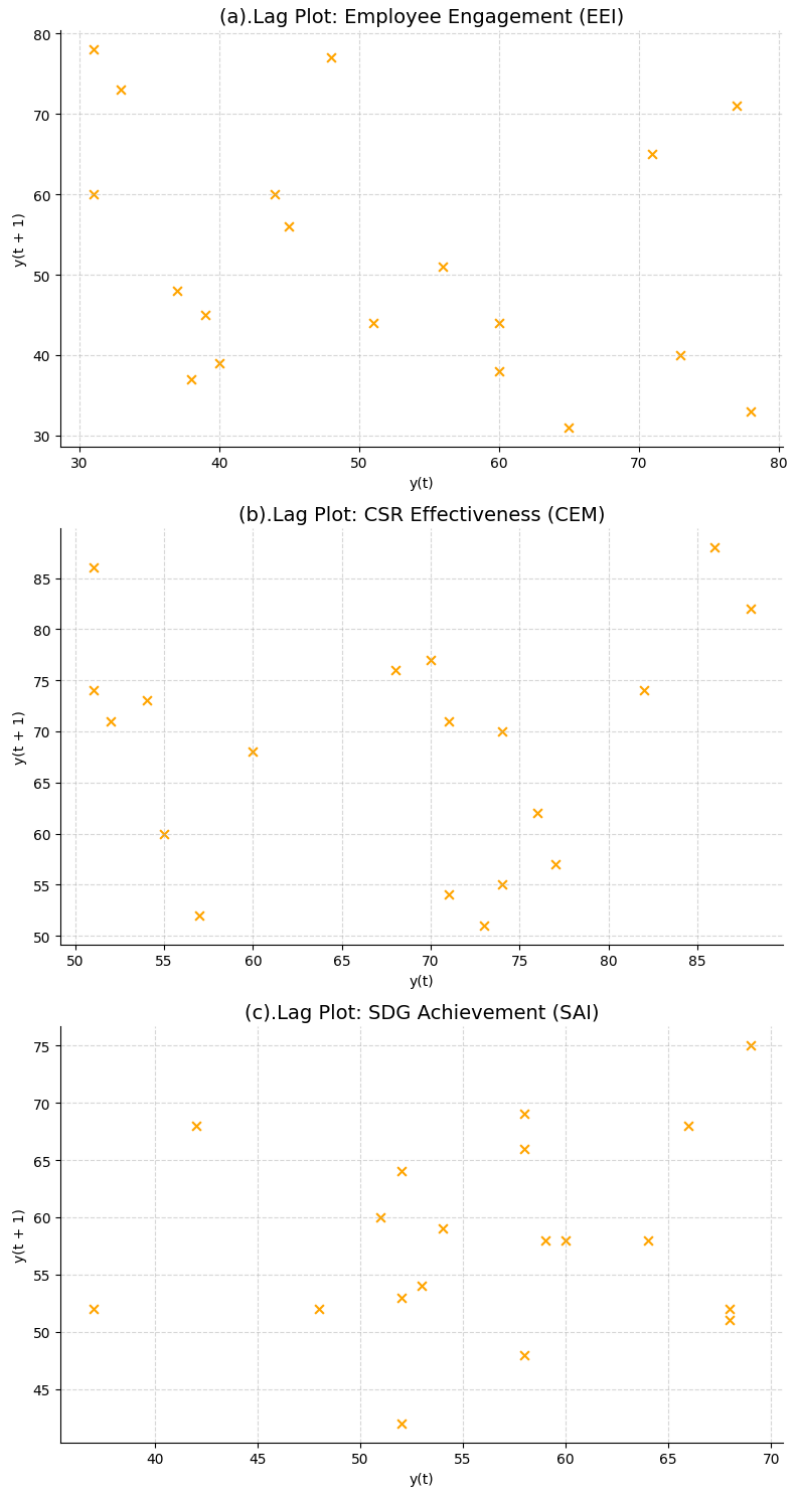


Figure 5 shows moderate stability in Employee Engagement and CSR activities over time, while SDG Achievement shows more variability, suggesting influence from external factors. The figure 5(a) plot shows moderate degrees of clustering which indicates relative consistency of employee engagement over time. The figure 5(b) plot shows a weak positive correlation which suggests that performing CSR activities effectively maintains positive correlation in subsequent periods. On the other hand, the figure 5(c) plot shows greater dispersion which implies greater variability in the achievement of sustainability goals and the possibility of dynamic external factors at play. Engagement and CSR efforts show moderate temporal stability while achievement of SDGs is more prone to fluctuations. Overall, the lag plots indicate that the engagement and CSR efforts exhibit moderate temporal stability while the achievement of SDGs is more prone to fluctuations.

Statistical Analysis and Interpretation of Results

The correlations and regressions used to study the connections between EE, CSR, and SDG achievement were performed via SPSS. Based on the findings, EE is highly correlated with CSR ($r = 0.68$, $p < 0.01$). Moreover, there is a moderate correlation between EE and SDG achievement ($r = 0.61$, $p < 0.01$). In turn, the CSR effectivity variable is strongly correlated with SDG achievement ($r = 0.72$, $p < 0.01$), which implies its key role in achieving sustainable results. Finally, in regression analysis, EE ($\beta = 0.42$, $p < 0.01$) and CSR ($\beta = 0.51$, $p < 0.01$) can predict SDG achievement with the level of explanation reaching 49% ($R^2 = 0.49$).

Descriptive Statistics

Table 2: Descriptive Statistics of Key Variables

Variable	Mean	Std. Dev	N	Min	Max
Employee Engagement (EE)	3.85	0.72	500	2.10	4.90
CSR Effectiveness	3.92	0.68	500	2.30	4.85
SDG Achievement	3.78	0.75	500	2.00	4.80

The descriptive statistics provided in Table 2 show that the average scores of employee engagement, CSR effectiveness, and SDG achievement are fairly high, indicating that there is a favorable attitude towards these measures.

Correlation Matrix

Table 3: Correlation Matrix of Employee Engagement, CSR, and SDG Achievement

Variables	EE	CSR	SDG
EE	1	0.68**	0.61**
CSR	0.68**	1	0.72**
SDG	0.61**	0.72**	1

Note: ** $p < 0.01$

As demonstrated in Table 3 below, the correlation matrix reveals significant and strong correlations between all variables, thereby indicating that higher levels of employee engagement lead to better performance in CSR and SDG.

Regression Analysis Table

Table 4: Regression Analysis Results for SDG Achievement

Variable	β	t-value	p-value
Employee Engagement	0.42	6.85	<0.01
CSR Effectiveness	0.51	7.92	<0.01

Model Summary: $R^2 = 0.49$, $F = 112.3$, $p < 0.01$

The regression outcomes of Table 4 show that both the Employee Engagement variable and the CSR Effectiveness variable have a significant effect on SDG Achievement. This confirms the conceptual framework and underscores the importance of having employees involved in corporate social responsibility for achieving sustainability.

NVivo Qualitative Analysis

The qualitative data analysis was conducted through NVivo software for identification of themes associated with the employee engagement and CSR. The identified themes include employee motivation, involvement in CSR activities, organization's support, and sustainability consciousness.

Sample excerpts:

- "Corporate social responsibility activities improve my involvement in my job."
- "Support from the organization makes me participate in sustainable projects."

Qualitative data are consistent with quantitative data, indicating that increased employee engagement enhances CSR performance and SDGs fulfillment.

Discussion of Key Findings

This paper emphasizes the important contribution made by employee engagement towards improving the effectiveness of Corporate Social Responsibility (CSR), which is crucial in attaining Sustainable Development Goals (SDGs). From the statistics gathered from regression and correlation analysis, there exists a significant and positive relationship between employee engagement, CSR effectiveness, and SDG accomplishment, accounting for 49% of the total variance in SDG results. It was also observed from the qualitative study conducted that organizational support, motivation of employees, and their commitment have played a crucial role in motivating them to get involved in CSR activities.

Conclusion

The study's outcome allows us to reinforce the connection between Employee Engagement, effectiveness of CSR, and how they contribute to achieving SDGs. Statistics proved the existence of positive correlations between Employee Engagement and CSR ($r = 0.68$, $p < 0.01$) and between Employee Engagement and attainment of SDGs ($r = 0.61$, $p < 0.01$). Furthermore, the results of the regression analysis showed that Employee Engagement ($\beta = 0.42$, $p < 0.01$) and CSR Effectiveness ($\beta = 0.51$, $p < 0.01$) are predictors of achieving SDGs, explaining 49% of the variance ($R^2 = 0.49$). Qualitative findings from the NVivo analysis, especially the themes of employee motivation and organizational support, coupled with the critical role that engagement plays in the attainment of sustainability goals, confirmed the findings of the quantitative analysis. Based on the findings, it could be inferred that organizations are likely to achieve sustainability goals if the employee's engagement, especially in CSR, is promoted. The research study faced several challenges. These challenges included self-reported data, limited sample size, and how they could compromise generalizability. The researcher has attempted to explore the challenges in detail and to their maximum extent in the subsequent research. Larger sample sizes, more varied in composition, and other variable combinations, like leadership and organizational culture, could provide valuable data. The research exercised internal controls to limit any potential biases. Among them, the use of data triangulation, with interviews, surveys, and CSR reports, was the most significant. Participants from several industries, anonymous response collection, and neutral coding in the NVivo qualitative analysis contributed to the overall objectivity of the study. Use of qualitative and quantitative, especially for the NVivo software data analysis, provided cross-sectional integration and added to the credibility of the research's findings.

Ethical Consideration

The research was carried out with adherence to the standard ethical research practices, and the Karpagam Academy of Higher Education, Coimbatore did not have to provide any formal ethical approval because of the type of data used in the study (anonymous survey data) and the voluntary nature of participation. Each respondent was informed of the aim of the research before data collection and informed consent was given. The participation was voluntary and the respondents were free to exit at any point without any repercussions. Personal and identifiable information was not gathered to guarantee confidentiality and privacy, and all answers were recorded anonymously. The data gathered was not utilized in any other way but instead served as an academic and research tool and was safely managed to avoid unauthorized use. The qualitative part was structured to allow the interview questions to be objective and neutral in order to prevent any influence on the responses of the participants and the analysis was performed in an objective manner. These steps were taken to make sure that the study complied with ethical standards and did not compromise the integrity, reliability and validity of the research findings.

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