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Achieving Environmental Performance through Corporate Social Responsibility: Can Green Capability and Green Transformational Leadership help?

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Abstract
This empirical study aims to assess the impact of corporate social responsibility on environmental performance with the mediating role of green transformational leadership and green capability by analyzing quantitative data from 422 employees of Pakistani listed manufacturing firms through questionnaires. Responses were analyzed by using SPSS and AMOS. The results indicate that corporate social responsibility has a positive significant impact on environmental performance and also has both indirect and positive significant effects through green transformational leadership and green capability. Moreover, path-wise outcomes have shown a positive impact of green transformational leadership and green capability as mediators. The current study proposed a model which helps policymakers and managers of manufacturing firms to manage corporate social responsibility, environmental performance, green capability and green transformational leadership and enhances sustainable development. Furthermore, this study contributes in existing literature in light of natural resource-based theory.

Keywords: corporate social responsibility, environmental performance, green capability, green transformational leadership, natural resource-based view theory.

1. Introduction

Businesses face problems of environment, and national and global environmental regulations have forced businesses to adopt diverse strategies for deriving environmental sustainability (Shah et al., 2021). Environmental sustainability has become necessary for global decision makers, scientists, and organizational leaders. However, organizational leaders have progressively prioritized the EP of their businesses over the past decades (Sobaih et al., 2022). This is driven by stakeholders who are influencing managers to prioritize environmental concerns and evaluate EP thoroughly (Latan et al., 2018). Industrial scholars have been increasingly motivated by a focus on environmental sustainability issues in recent years (Kraus et al., 2020). To address this problem, green programs at a global level are introduced by businesses and policymakers to make the environment eco-friendly by introducing green bonds and green financing programs to avoid unnecessary paper use (Kraus et al., 2020), for understanding and awareness of environmental challenges and encouraging policies and practices that protect the planet and its resources. Various methods are utilized by businesses in their manufacturing process to fulfill societal needs, environmental concerns, and business essentials.

In the dynamic of the business domain, many businesses are now focusing on using green practices and ensuring that their EP is sustainable. Thus, this study analyzes the perception that EP is essential for developing global business trends (Ilyas et al., 2024b; Kraus et al., 2020). The manufacturing sector's focus on CSR can be attributed to globalization and international trade. These factors lead to more complex business environments and a need for transparency and corporate responsibility (Jamali & Mirshak, 2007). Many studies highlight the dimensions of CSR, which outlines the association between strategies of leadership and firm performance that directly affect community engagement and welfare (Huda et al., 2018; Kusi et al., 2021). In manufacturing industries, relying solely on one leadership style is often unrealistic. Successful leaders frequently integrate their leadership and sustainable approaches to efficiently address the complications in manufacturing procedures and team dynamics (Zaleznik,

1977). In this context, GTFL focuses on giving a clear vision and motivating employees to achieve environmental goals while supporting their growth and development (Mittal & Dhar, 2016). GTFL positively impacts the firm's performance. Encouraging and motivating their team leads to commitment, teamwork, better trust, and EP. Other studies also show that when leaders motivate their team's learning and creativity, it improves employees' performance, talent management, and effectiveness (Zhu et al., 2005). Most researchers discuss dynamic capabilities and pay less attention to GC. With the rapid development of the environment, industries must adopt GC to ensure sustainability by achieving a sustained competitive advantage and excellent performance (Teece & Pisano, 2003). Environmental strategy and green innovation are pivotal mediating variables in the association between EP and initiatives of CSR (Kraus et al., 2020). Previous studies show that leaders serve as essential mediators in implementing the approaches supported by HRM to develop both motivation and performance of employee (Sikora et al., 2015). As highlighted by Ilyas et al. (2024a), enhance the effectiveness of environmental initiatives, as 'in comparison to the existing leadership styles interlinked with work engagement, inclusive leadership (IL) may play an exclusive role in the development of work engagement because it is notable by its essential concentration on meeting employees' distinctiveness and belongingness necessities, while other forms of leadership differ from this concern. This integration underscores the vital role of adaptive leadership in driving Environmental business practices. Building internal competencies and GC for influential people management in manufacturing firms is critical but with different perceptions (Singh et al., 2020). GC, including resource reconfiguration, resource integration, and environmental insight, is mediating in attaining EP (Qiu et al., 2020; Rehman et al., 2022). This study will explore the relationship between EP and CSR, analyzing how GTFL and GC act as mediators in this relationship.

In prior literature, CSR is pivotal to impact the development of GC (Rehman et al., 2022), which ultimately contributes to improve the EP of manufacturing sector. In the development of industries, leaders recognized the importance of an eco-friendly environment. These strategies aim to correspond profitability with social responsibility and the environment, reflecting an identified development of the connection of these elements in modern era (D'amato et al., 2009). GTFL motivates teams to maintain an environment that boosts industrial performance. GC is about having the skills and resources to be eco-friendly. While GTFL has received significant attention, it is crucial to acknowledge that GC holds equal importance, particularly within the manufacturing sector. However, this study realized GC's importance in addressing environmental problems. Organizations that give preference and invest in GC contribute towards transforming sustainable business practices. GC focuses on uniting and reconfiguring resources concerning about safeguard of environment (Qiu et al., 2020) that reduce environmental impact. Organizations implementing these capabilities into their operations will mitigate their carbon footprint and improve overall EP. CSR plays a significant role in this transformation, promoting organizations to follow ethical and sustainable practices. By aligning CSR initiatives with the development of GC, organizations can develop themselves as environmentally responsible stewards. This implementation accomplishes societal expectations and create trust and loyalty among consumers that are environmentally responsible. Eventually, the combined effect of CSR and GC promotes a robust approach towards sustainability, giving an advantage to organizations and the planet.

Despite the critical role of GC towards firms' EP, very few studies have explored this relationship. Prior studies focus on organizational capabilities (Rehman et al., 2019), absorptive capacity (Scuotto et al., 2017), and dynamic capabilities (Teece & Pisano, 2003). Therefore, this study explores the relationship of GC with CSR and EP and also as a mediator between CSR and EP. Furthermore, the study evaluated how GTFL acts as a mediator and can help us understand how businesses can improve their EP.

This study has several implications in EP of firms in business management. Practically, it provides insights into how GTFL and GC in the manufacturing sector can better plan and implement sustainable practices to improve EP. Theoretically, this study contributes by exploring GTFL and GC in the association between CSR and EP as mediators. By explaining this mechanism, the study improves the understanding of how the manufacturing sector's practices influence the environment by providing a valuable context for future research and practical applications in sustainability management.

The paper starts with an introduction explaining the significance of EP and the role of CSR in environmental management. Then, it offers a complete literature review on EP, CSR, GTFL, and GC. By following this, the methodology section outlines the research methods. Results will be analyzed, and their implications will be discussed. Finally, the conclusion synthesizes findings.

2. Literature review

2.1. Natural resource-based view theory

The decrease in the earth's natural capital and shifts in ecosystems have a worse impact on society; firms must focus on utilizing natural resources to ensure their ongoing capability. Firms do so to avoid an increased shortage

of valuable environmental resources and ecological services. As businesses pay attention to the limitations set by the natural environment, incorporating environmental sustainability into the strategic management process will become crucial for maintaining their resource-based advantages (Michalisin & Stinchfield, 2010). Resource-based view (RBV) theory hypothesizes regarding this phenomenon. According to the RBV, competitive advantage is attained from resources and capabilities of the organization (Barney, 1991). However, the other form of RBV theory is the natural resource-based view theory (NRBV), introduces the idea that sustained competitive advantage is gained by firms when they are struggling against natural environmental problems (Hart, 1995). Makhloufi et al. (2022) affirm that NRBV helps firms gain high EP if they reduce pollution, prefer environment-friendly products, and improve the sustainable development of the environment.

In addition to EP, scholars are considering the RBV theory to evaluate the CSR practices of firms (Gallego-Álvarez et al., 2011; Le, 2023). To examine the CSR of firms, RBV theory is considered helpful for authors because it focuses on the significance of resources and capabilities that are intangible and acknowledges them as sources that derive the success of firms (Gallego-Álvarez et al., 2011). In extension to RBV theory, NRBV theory can be a helpful approach to examine the association between CSR and EP. The choice of this theory is based on its three new strategies, which give solutions to organizations for addressing environmental problems (Alt and Spitzeck (2016), including pollution reduction, sustainable development and product stewardship for the environment (Hart, 1995).

However, prior research uses institutional theory for environmental performance (Chaudhry & Amir, 2020), need satisfaction theory for CSR (Kim et al., 2020), market-based view theory for green transformational leadership (Özgül & Zehir, 2023), dynamic capabilities theory for green capabilities (Yuan & Cao, 2022). But few studies focus on NRBV theory to measure EP, CSR, GTFL, and GC. In light of NRBV theory, this study examines CSR, GTFL and GC and their influence on EP.

2.1. CSR and EP

CSR is the prominent focus of many researchers, and its literature has consistently developed (Li et al., 2022). Bowen (1993) first pays particular attention to CSR as the critical responsibility of business experts to confirm that every activity and behavior is according to societal values and business goals. In recent times, due to the increase in environmentally conscious consumers, particular attention has been paid by businesses to improve their EP because stakeholders are pressurizing the organization to work on environmental problems, including the government, customers, workers, and competitors (Pekovic & Vogt, 2021).

Stakeholders pressurizes organizations which includes customers, employees, and government, to work on environmental issues (Pekovic & Vogt, 2021). Therefore, CSR is a critical area of interest for researchers nowadays. Researchers studies CSR and its influence on financial performance, but there is requirement of more studies exploring CSR and EP (Channa et al., 2021). Alvarado Herrera (2008) discusses the economic, social, and environmental dimensions of CSR. Sustainability and practical CSR approaches improve organizational performance (Helfaya & Moussa, 2017). Fraj-Andrés et al. (2009) founds positive association between CSR and sustainable approaches. Tyteca (1996) states EP as "the degree to which an organization is taking action to incorporate environmental considerations in its operational decisions and following the acceptable standards, self-interest and response to stakeholders" (Anser et al., 2020). In this context, Rivera et al. (2017) acknowledge that commitment to CSR by managers can enhance EP by controlling material waste and pollution at the time of recyclable product manufacturing. Similarly, it was also found in the study of (Chuang & Huang, 2018) that CSR activities enhance EP. From above discussion is proposed that:

H1. CSR significantly positively influences EP of the firm

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2.2. CSR and GTFL

On the other hand, the focus is shifted towards leadership styles because of the leader's capabilities to address and enhance the organization's sustainable outcomes. Among several leadership styles, GTFL is vital in evaluating green performance (Bhatti et al., 2023). In this context, Bhatti et al. (2023) found that GTFL is a significant determinant of sustainable performance. A study by Mittal and Dhar (2016) focuses on GTFL's ability to improve green creativity (Mittal & Dhar, 2016). Some authors also discuss that CSR acts as a mediator between GTFL and employee green performance, such as in a study by Tosun et al. (2022). Similarly, GTFL acts as a critical determinant in implementing CSR for the green performance of the business (Sobaih et al., 2022). Kusi et al. (2021) outlines that GTFL helps to provide motivation, clear goals, and inspiration via green strategy, along with encouragement to those employees who are socially responsible. This shows the importance of sustainable green techniques to make the organization more responsible (Besieux et al., 2018; Singh et al., 2020).

On the other hand, ecological problems are the primary concern globally, and CSR is vital to foster GDCs. Mousavi et al. (2016) assert that if a firm implements CSR, it will acknowledge the consumer's requirements to improve EP in terms of product design, advertising, absorbing green supplier's expertise and knowledge, manufacturing, and

mitigating the harm that occurred to the environment during procedures of production and procurement. In addition, a good working relationship is developed by firms with stakeholders, encompassing customers, government, the public, suppliers, and channels of resource integration to approach green resources in large amount (Flammer & Kacperczyk, 2016). By considering these relationships, the firm adheres to policies of green development and the rising demand of customers for green products, helping the firm swiftly achieve business goals and maximize profit.

Presently, there is expeditious change and ecological problems in the environment that is why GC is essential for the survival of firms. GC focuses on uniting and reconfiguring resources for security of environment (Qiu et al., 2020). Adopting CSR practices facilitates firms to attain several resources needed for green development, ultimately enhancing their GDCs (Aftab et al., 2023). CSR practices fulfill consumers' frequently changing requirements with the assistance of GC (Choi et al., 2019). Therefore, these insights from the literature lead to the below hypotheses.

H2: CSR significantly positively influences GTFL of the firm.

H3: CSR significantly positively influences GC of the firm.

2.3. GTFL and EP

The interest arises among GTFL and EP, preferably when it is related to firms that are innovative in their products to achieve competitive advantage (Donate & de Pablo, 2015). GTFL is a behavior of leadership in which the focus is to keep up with developmental needs concerning the accomplishment of the environmental goals of the firms (Cheema et al., 2020; Mittal & Dhar, 2016). GTFL helps in developing the sense of responsibility among employees, including employee engagement and green performance (Ramus & Killmer, 2010), as well as improving the firm's EP. Sun et al. (2022) also increase the impact when leaders explicitly share the vision of the firms' environmental goals (Wong et al., 2020). Prior literature also explains the link between adopting GTFL and achieving EP by motivating employees and co-workers (Chen et al., 2006; Donate & de Pablo, 2015). Hence, we proposed, based on the above literature,

H4: GTFL significantly positively influences EP of the firm.

2.4. GC and EP

In recent years, there has been a rapid transformation in the environment, and to achieve high performance and sustainable competitive advantage, organizations can survive by having GC (Rehman et al., 2022). There is a significant focus on dynamic capabilities in prior studies (Teece & Pisano, 2003), but there needs to be more researches that is exploring GC (Hussain et al., 2022). GC is a capability that focuses on incorporating, building, and reconfiguring the environmental protection's external and internal resources (Qiu et al., 2020). Rehman et al. (2019) discusses that organizational capabilities lead to the enhancement of firm performance. Moreover, NRBV outlines that GC can act as a predictor to improve EP (Hart, 1995). Despite of organizational capabilities, the relationship between innovation and absorptive capacity was explored; the capacity includes internal and external knowledge along with R&D activities (Scuotto et al., 2017). Furthermore, Qiu et al. (2020) advocate that competitive advantage can be gained by having GDCs. Despite its importance, more evaluation of GC is still needed to determine EP. This study proposes the below hypothesis to fill this gap.

H5. GC significantly positively influences EP of the firm

2.5. GTFL and GC mediating role

The above exploration regarding the association between CSR, GTFL, GC, and EP provides a clear view that CSR has an impact on GTFL, which helps the organizations stick to environment-friendly practices, resulting in the improvement of EP. It is found that CSR influences financial performance (Channa et al., 2021). Bhat et al. (2024) assert that CSR impacts GTFL's capacity and significantly develops the environment. Qiu et al. (2020) define GC as a capability that focuses on incorporating, building, and reconfiguring environmental protection's external and internal resources. This shows that GC is an environmental activity, and according to literature findings, CSR substantially impacts environmental activities (Hussain et al., 2022; Weng et al., 2015). In this way, the literature provides evidence that GC can be a mediator between CSR and EP. It is also highlighted that organizational capabilities enhance performance of firm (Rehman et al., 2019). This means that the GC of the organization sticks the organization to sustainable practices, resulting in EP. Regarding mediation, prior studies on CSR encouragingly discuss the organization's incentive (Orazalin, 2020). However, it is found that there is a multidimensional association between financial rewards and CSR in an organization (Hernandez-Almazan et al., 2022). This shows organizational rewards and CSR strong connection, and there is a need for further evaluation of other variables that act as mediators between CSR and EP (Singh et al., 2020). Moreover, GC and GTFL improve environmental practices, and those individuals who pay attention to GC and GTFL and support improvements to get more advantages (Hussain et al., 2022). In light of NRBV theory, GC and GTFL further clarify the relationship between

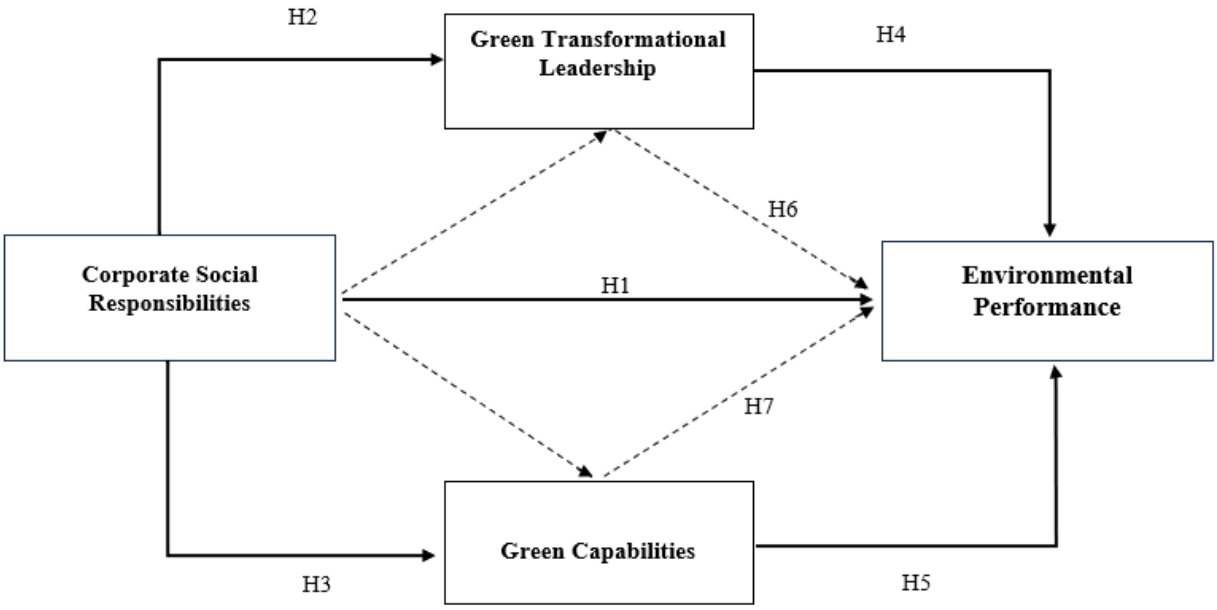
CSR and EP. However, there is very scarce literature exploring GC and GTFL as mediators. Therefore, the following hypotheses are proposed:

H6. The implementation of GTFL is significantly mediates the relationship between CSR and EP of the firm

H7. The implementation of GC is significantly mediates the relationship between CSR and EP of the firm

The research model is shown in Figure 1, which is proposed based on the above hypotheses created by getting insights from the literature.

Figure 1: Research framework



3. Methodology

3.1. Measures

For CSR, a scale with 4-items was adopted from (Hussain et al., 2022). The scale of EP was adopted from Chaudhry and Amir (2020), consisting of 4 items. GC was measured by using 7 items scales adopted from (Rehman et al., 2022). Lastly, the scale for GTFL consisting of 6 items was adopted from Chen and Chang (2013). A 5-point Likert scale consisted of responses from strongly disagree to strongly agree was used.

3.2. Population and Sampling

This study integrated an empirical methodology and uses techniques based on primary data, which is collected through a survey. Stratified random sampling (SRS) is a method that recognizes diverse strata within a research population, expecting variations in parameters. It involves allocating specific proportions to each stratum and selecting samples accordingly (Jehan et al. (2020). Our study's population comprises three subgroups: first-level, middle-level, and top-level managers. The expectation is that these three groups exhibit variations in parameters. By employing this SRS technique, we aim to reduce sampling bias, ensuring an equal opportunity for every element in the population to be sampled. The sample size was decided as per Kline (2015) "10 times rule". According to this, sample size must be (21 × 10 =210) participants, 600 questionnaires were circulated to participants because of expectation of missing or invalid responses, and these respondents were approached through personal visits and mail. The questionnaires were in English, and informed consent was obtained from each participant. They were assured that, identities would be anonymous, and responses would only be used for the current study's purpose. Out of 600, 468 participants filled the questionnaire, and 422 responses were used for analysis because the other 46 had more than 25% missing values.

Table 1: Demographics

Participant Demographics		Frequency	%
Gender			
	Male	280	66.4
	Female	142	33.6
	Total	422	100.0
Education			
	Intermediate or less	8	1.9
	Bachelor	127	30.1
	Master	268	63.5
	PHD	19	4.5
	Total	422	100.0
Marital Status			
	Married	272	64.5
	Unmarried	150	35.0
	Total	422	100.0
Job Status			
	First level Manager	229	54.3
	Middle Level Manager	157	37.2
	Top level Manager	36	8.5
	Total	422	100.0

Table 1 presents the demographics of 422 respondents. Gender distribution shows 66.4% male and 33.6% female. Regarding education, 63.5% hold a master's degree, 30.1% have a bachelor's, and 4.5% have a PhD. Marital status indicates 64.5% are married, and 35.0% are unmarried. Job status reveals 54.3% first-level managers, 37.2% middle-level managers, and 8.5% top-level managers.

3.3. Data analysis

The quantitative data of this study was analyzed by using SPSS and AMOS. SPSS was utilized to confirm the reliability and validity of measures. On the other hand, AMOS was used for discriminant and convergent validity, CFA, and structural equation modeling (SEM). SEM is a tool for analysis that collectively integrates regression, factor analysis, and correlation to address the potential problems in humanities, biological, and social sciences (DiLalla, 2000).

4. Analysis and findings

4.1. Reliability and validity analysis

Normality was checked from mean and skewness of data. The mean value for CSR, EP, GTFL, and GC falls from 1 to 5, showing the rating scale of the variables, which is acceptable. The skewness for CSR is -.632, -.639, -.745, and -.493 and is within the acceptable criteria, i.e. -1 to +1. This confirms data normality. On the other hand, Cronbach's alpha was computed to check the reliability of measures, which is .928, .917, .953, and .917 for CSR, EP, GTFL, and GC, respectively, indicating that values are greater than 0.7, as shown in Table 2. The indicators such as AVE and MSV check convergent validity; the results provide evidence for convergent validity of data because each variable has a value of AVE greater than 0.5, and MSV values are less than AVE.

Discriminant validity is proven by analyzing the correlation, which is near to 1, such as 0.784, 0.874, 0.857, and 0.880 of GC, CSR, EP, and GTFL respectively, illustrated in Table 3. The factor loadings in Table 4 demonstrate strong associations between items and their respective factors. All loadings exceed the widely accepted threshold of 0.70, indicating good model fit and supporting construct validity.

Table 2: Descriptive statistics, reliability, and convergent validity

	Min	Max	Mean	Skewness	α	CR	AVE	MSV
CSR	1.00	5.00	3.493	-.632	.928	0.928	0.763	0.420
EP	1.00	5.00	3.583	-.639	.917	0.917	0.735	0.524
GTFL	1.00	5.00	3.459	-.745	.953	0.953	0.774	0.524
GC	1.43	5.00	3.515	-.493	.917	0.917	0.614	0.081

Table 3: Discriminant validity

	GC	CSR	EP	GTFL
GC	**0.784**			
CSR	0.278	**0.874**		
EP	0.284	0.648	**0.857**	
GTFL	0.212	0.619	0.724	**0.880**

Table 4: Factor loading

Items	1	2	3	4
CSR1			.834	
CSR2			.819	
CSR3			.805	
CSR4			.823	
EP1				.757
EP2				.757
EP3				.829
EP4				.758
GTFL1	.870			
GTFL2	.858			
GTFL3	.853			
GTFL4	.847			
GTFL5	.773			
GTFL6	.789			
GC1		.762		
GC2		.812		
GC3		.781		
GC4		.824		
GC5		.816		
GC6		.828		
GC7		.843		

Table 5: CFA

Indicators	CMIN/DF	GFI	IFI	CFI	RMSEA	KMO
Standard value	≤3	≥0.80	≥0.90	≥0.90	≤0.08	0.6-1.0
Calculated value	2.928	0.891	0.955	0.955	0.068	.927

Abbreviation: Confirmatory Factor Analysis (CFA).

In the proposed model, the independent variable is CSR, dependent variable is EP, and GC and GTFL are positioned as mediators; model fitness is confirmed through CFA. The indicators of CFA are CMIN (2.928), GFI (0.89), IFI (0.955), CFI (0.955), RMSEA (0.068) and KMO (.927), indicating that all values are appropriate according to their respective threshold values showing a good model fit.

4.2. Hypothesis testing

The findings from SEM analysis, as presented in Table 6, offer valuable insights into the relationships proposed in the study for each variable.

CSR's direct effect on EP is estimated at 0.273 ($p < 0.001$), providing strong support for H1. This suggests that CSR significantly and positively influences EP. Moreover, the direct effects of CSR on both GTFL (0.592, $p < 0.001$) and GC (0.217, $p < 0.001$) are also significant, confirming H2 and H3. These results shows CSR is positively associated with both GTFL and GC.

Table 6: SEM

Effects	Estimate	S. E	P	Decision
CSR --> EP	.273	.043	0.000	Supported
CSR --> GTFL	.592	.039	0.000	Supported
CSR --> GC	.217	.040	0.000	Supported
GTFL --> EP	.502	.043	0.000	Supported
GC --> EP	.101	.042	0.015	Supported
Indirect Effects				
CSR --> GTFL --> EP	.297	.033	0.010	Supported
CSR --> GC --> EP	.022	.010	0.022	Supported

Additionally, the SEM results show a positive effect of GTFL on EP (0.502, $p < 0.001$), supporting H4. This implies that GTFL enhances EP. Similarly, the direct effect of GC on EP is 0.101 ($p = 0.015$), supporting H5 and indicating a positive impact of GC on EP.

Furthermore, GTFL and GC's mediating role is examined in current study in the association between CSR and EP. Despite of direct effect, there is indirect effect of CSR on EP via GTFL whose beta value is 0.297 ($p = 0.010$), hence providing support to H6. This shows that GTFL acts a mediator in association between CSR and EP. Similarly, the CSR indirect effect on EP is analyzed via GC which shows the beta value of 0.022 ($p = 0.022$), H7 is supported and representing that GC acts as a mediator between CSR and EP.

5. Discussion of Findings

The results strengthen the theoretical foundations laid out in the literature, mainly supporting the NRBV theory. It is found that CSR has a positive relationship with EP; CSR has become a focal point in recent research, consistent with the increasing awareness of societal and environmental issues. Bowen's (1993) early focus on CSR as a critical responsibility aligns with the current study's findings, establishing a positive association between CSR and EP.

The positive impact of GTFL and GC aligns with the literature, highlighting CSR's role in promoting leadership styles and dynamic capabilities that contribute to sustainable outcomes. Bhatti et al. (2023) and Mittal and Dhar (2016) highlights the importance of GTFL in sustainable performance of an organization, while Qiu et al. (2020) and Mousavi et al. (2016) discuss the significance of CSR initiatives to develop GC of firms. The current study findings aligns with prior studies and contribute by exploring the critical relationship between CSR, GTFL, and GC.

The research findings validate that GTFL and EP has significant positive relation, as proposed in the literature. GTFL, is emphasized by focusing on developmental requirements and goals of environment, aligns with (Cheema et al., 2020; Donate & de Pablo, 2015) who highlights its positive impact on EP and employee engagement. This provides supports to the notion that effective leadership who focuses on environmental goals positively influences EP of firms.

Similarly, GC and EP are positively associated with each other such as (Rehman et al., 2019) advocated about dynamic capabilities' significance to achieve sustainable competitive advantage and high performance. However, the findings regarding GTFL and GC mediating role between CSR and EP are significantly positive like findings of (Hussain et al., 2022). The study lays its foundation on NRBV theory and its findings are aligning with theory's perspective by describing how CSR impacts GTFL and GC, lead to improved EP and sustainable practices.

5.1. Implications

The present research framework seeks to clarify how manufacturing companies can understand the impact of CSR, GTFL, and GC on their EP. Theoretically, this research has particular research outcomes that provide a novel perspective by focusing on the mediating role of GTFL and GC to enhance business performances, which are essential for theoretical advancement. Prior studies have utilized stakeholder theory, theory of ability motivation–opportunity, and contingency theory to study the connection between CSR, GI, and EP. For instance, effect of CSR on EP through stakeholder theory was explored (Hernandez-Almazan et al., 2022). Moreover, NRBV theory provides understanding to utilize natural resources for sustainability and performance enhancement. It contributes to NRBV theory by applying it in evaluation of CSR, GTFL, GC, and EP. It understands theory implementation beyond the traditional focus on competitive advantage for enhancement in performance and sustainability of environment. It provides suggestions for businesses to integrate natural resources while gaining environmental sustainability. It also improves knowledge of how businesses can achieve goals of environmental sustainability.

Practical insights of this study for businesses focus on improving their EP. By highlighting the importance of CSR, GTFL, and GC, businesses can develop strategies and initiatives that prioritize environmental sustainability while

maintaining competitiveness in the manufacturing sector. GC enables businesses to innovate and develop environmentally sustainable products and services. By developing a green culture of innovation and providing essential skills and resources to employees, businesses can follow the market trends and discuss the increasing demand for eco-friendly results. Policymakers can implement insights from the mediating roles of GTFL and GC among CSR and EP to facilitate the development of regulatory frameworks that encourage environmental sustainability in the manufacturing sector. By incorporating measures for leadership training programs and capability-building initiatives into environmental policies, policymakers can encourage manufacturing industries to adopt sustainable environmental practices. Executives in the manufacturing sector can identify the importance of advancing leadership development programs focused on GTFL. By identifying the importance of GTFL and GC as mediating variables in the CSR and EP relation, policymakers, executives, and industry practitioners can adopt a comprehensive method for environmental sustainability in the manufacturing sector by advancing favorable environmental outcomes.

6. Conclusion

The study discusses the association between CSR, GTFL, GC, and EP where GTFL and GC are positioned as mediators, leading to positive influence of CSR on EP within the listed manufacturing firms of Pakistan. Organizations which pay attention to these relationships can help them to make their environmental sustainability better and achieve competitive advantage for long-run. The study lays its foundation on NRBV theory to explore variables relationships that are contributing to foster sustainable development in firms. The data was collected from 422 respondents of Pakistan's manufacturing firms through questionnaires. Analysis of the study findings shows the significant positive impact of CSR on both GTFL and GC, therefore enhancing EP. Moreover, GTFL and GC acts as mediators between CSR and EP, clarifying the significant role of leadership and organizational capabilities in advancing environmental sustainability. This highlights CSR implementation importance into the leadership framework and encouraging GC within organizations to achieve sustainable competitive advantage and enhance EP.

6.1. Limitations and future suggestions

While there are valuable contributions and has significant implications for research, it is vital to consider noteworthy limitations that may be addressed in future research. Firstly, manufacturing firms were the only focus for data collection, but there are also significant contributions by the service sector in country's economy. Scholars in the future can pay attention to the services sector and then perform a comparative analysis with the current study's results. Secondly, the sample size (n= 422) was limited, and the findings will not be generalizable to other sectors of countries. There can be a larger sample size, and it can be conducted in other countries and sectors. Thirdly, the data collection was cross-sectional, but it needs to be confirmed that findings regarding CSR, GTFL, EP, and GC could be similar for an extended period of time. Therefore, future studies can adopt the longitudinal method to enhance the finding's credibility. Fourthly, the current study did not check the moderating effect of significant variables. Future research can evaluate green climate and GHRM practices moderating role in the current model. Lastly, study uses self-report measures. However, standardized scales were used, and each respondent filled out questionnaires according to their perspectives and experiences, which may contain some deviations. Future scholars can use secondary data for CSR and EP from financial reports to analyze the current study's model to make the study's conclusions more robust.

7. REFERENCES

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