Microelectronics' Sustainable Surge: The Role of Green Perceived Value, CSR Practices, and Competitor Pressure in Organizational Performance

DOI: 10.46970/2023.29.3.09
Volume 29, *Number* 3
December, 2023, *pp.* 143-164

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This research aims to explore the existing relationship of green perceived value with corporate social responsibility and the organizational performance of businesses. Moreover, this research used corporate social responsibility as a mediating variable and competitor pressure in microelectronics industry as a moderating variable among the relationship of green perceived value and the organizational performance. This research was conducted in Kingdom of Saudi Arabia and collected data from 172 employees of various department who were working in different organizations of microelectronics industry. To achieve the aim of this research this study has employed the STATA software with structural equation modeling approach. Findings of this research have shown a significant association among direct relationships of green perceived value and the organizational performance. Moreover, a significant relationship was also found among green perceived value and corporate social responsibility. The findings also confirmed that the relationship between green perceived value and the organizational performance is also moderated by competitor pressure in microelectronics industry and mediated by corporate social responsibility. This study shows how environmental, social, and competitive factors affect business success, which is important for sustainability plans. The findings suggest that microelectronics companies should consider the environment and society while making long-term strategic decisions to improve performance and efficiency.

Keywords: Sustainability Practices, Microelectronics Industry, Green Perceived Value, Corporate Social Responsibility, Organizational Performance.

Introduction

With the world evolving at such a rapid pace, firms have multiple issues, such as how to incorporate CSR policies and green perceived value. Organizational research into CSR and sustainability practices is expanding rapidly and getting more complex, and this development establishes a new field of study at their confluence (Bhat et al., 2024). In today's fast-paced corporate environment, sustainability is becoming increasingly crucial in many organizational activities (Fosu, Fosu, et al., 2024). In environmentally-sensitive industries like microelectronics, the paradigm is shifting (Fosu, Yi, & Asiedu, 2024). The

microelectronics industry is under pressure to solve environmental issues while preserving a competitive edge due to global competition and rapid technical innovation (Abbas et al., 2024). Thus, understanding the relationships between organizational performance, sustainability, and competitive dynamics in this setting is crucial (Anwar, Channa, & Shah, 2023; Zhang, Oo, & Lim, 2024). Sustainability in business planning helps organizations manage environmental issues and seize new opportunities, according to studies (Khan, Sheikh, & Tahir, 2024). The growing body of research on sustainable business practices has concentrated on economic viability, social responsibility, and environmental stewardship (Liao, Hu, & Ye, 2024). To understand how sustainable strategies affect corporate performance this research examines how perceived value of environmentally friendly activities, competitive pressures, corporate social responsibility, and other factors affect microelectronics organization performance.

Many studies (Marrucci, Daddi, & Iraldo, 2023; Yue, Huo, & Ye, 2023) have shown that environmental measurements and economic impacts in the microelectronics industry are interconnected, especially in industrial sustainability and organizational performance. Zhou, Tiruneh and Legese (2023) examined how environmentally friendly policies affect microelectronics companies' finances. Thorough research was done. Research shows that environmentally friendly practices boost business efficiency, lowering costs and increasing profits. Tian, Huang and Cheablam (2023) examined how creative environmentally friendly goods affect microelectronics marketing. After analyzing several companies' innovation strategies and market positioning, eco-friendly technology investors often noticed increases in market share and consumer loyalty. Ali et al. (2023) examined how sustainability standards affect microelectronics industry organizational performance longitudinally. Numerous studies (Mangi et al., 2023; Nureen et al., 2023; Sarfraz et al., 2023) show that companies with excellent environmental management systems and proactive sustainability activities beat their competitors in financial performance, innovation, and stakeholder satisfaction. German et al. (2023) studied the effects of corporate social responsibility (CSR) on microelectronics companies' market standing and competitiveness. Their research shows that companies that prioritize corporate social responsibility are more likely to attract and keep top talent, build trusting relationships with suppliers and customers, and handle legal and social activism issues.

Although a lot of empirical evidence suggests that sustainability policies improve organizational performance, little is understood about how they do so (Mehmood & Hanaysha, 2022; Singh et al., 2022). One shortcoming of the study is that it did not examine how competition affects sustainability and performance. Several studies suggest that microelectronics companies may benefit from green practices (Xu et al., 2022; Yong et al., 2022). However, research on how competitive dynamics affect sustainability programs in this environment is scarce and long-term research on organizational performance and sustainability strategies in microelectronics is lacking. Most empirical research has been cross-sectional or short-term, making it hard to predict how sustainability measures would affect an organization's financial stability, competitiveness, and strategic competence (Le, 2022; Mo et al., 2022). Past research has ignored the intermediary mechanisms that provide microelectronics producers a competitive edge from sustainability policies (Yuan & Cao, 2022). Numerous studies show that corporate social responsibility, environmental initiatives, and performance

reviews are linked (Hang et al., 2022; Qamar, Afshan, & Rana, 2023; Sobaih et al., 2022). This relationship has been shown, but its mechanisms are unknown. Sustainable business practices' effects on microelectronics companies' innovation, customer connections, supply chain resilience, and regulatory compliance need further study (Ahmed & Streimikiene, 2021). Looking into these gaps may help us understand the complicated interplay between competitive dynamics, organizational performance, and sustainability in microelectronics.

Institutional theory (Alam & Islam, 2021) and the resource-based viewpoint assist explain organizational outcomes and sustainability initiatives. Business efficiency and competitiveness can be improved by using environmental knowledge and resources (Kusi, Zhao, & Sukamani, 2021). In contrast, institutional theory shows how institutional influences affect organisational behaviour and sustainability (Zhou, Sawyer, & Safi, 2021). This study explores how competitive pressure moderates the relationship between microelectronics sector organizational performance, green perceived value, and corporate social responsibility. This study examined the association between CSR initiatives and perceived green value to address the question, "How do CSR initiatives and perceived green value relate to organizational performance?" Its secondary goal is to understand how competitive pressure moderates these links. The report also provides microelectronics companies with practical tips for keeping competitive in today's dynamic market.

Literature Review

Eco-friendly microelectronics is a major step toward ethical technology and environmental awareness. For years, scholars have studied how this phenomena affects social, environmental, and economic sustainability (Channa et al., 2021; Zhao et al., 2021). According to Tu and Wu (2021), the microelectronics industry consumes a lot of energy and creates electronic trash, which harms the environment. These issues must be addressed by the industry. Experts have suggested several practical ways to reduce environmental damage (Khan et al., 2021). These include eco-friendly materials, energy-efficient manufacture, and creative recycling. Úbeda-García et al. (2021) have long stressed the importance of corporate executives, politicians, and academic institutions working together to improve sustainable microelectronics. This cooperation drives technology improvements, legislative reform, and financial incentives for environmentally responsible behavior (Chang, Yeh, & Li, 2020). Consumer demand and knowledge influence industry sustainability, according to the literature. Businesses are under pressure to include eco-friendly techniques into product design and disposal (Baah, Jin, & Tang, 2020). This is due to customers' growing awareness of modern products' environmental impact. Many scholars study how microelectronics sustainability affects resource depletion, social inequality, and climate change (Abbas, 2020; Costa, Santos, & Angelo, 2020). If they prioritize sustainability, microelectronics firms can reduce their environmental impact and help create a more sustainable society.

The "green perceived value" of a company's environmental operations and policies is assessed by stakeholders (Riva & Gani, 2020). This evaluation is about organizational dynamics. This concept covers several topics, including how much an organization complies to social norms and its environmental benefits (Kalyar, Shoukat, & Shafique, 2020). In addition to financial indicators, an organization's performance is measured by its ability to

achieve its strategic goals (Kraus, Rehman, & García, 2020). A company's success depends on market share, operational efficiency, creative potential, and stakeholder satisfaction. Extensive study reveals that a company's environmental reputation affects its performance (Moneva, Bonilla-Priego, & Ortas, 2020). These studies show how environmental stewardship affects company performance. Bhat et al. (2024) found that environmentally friendly activities boost a business's reputation and customer loyalty, which boosts profits. Abbas et al. (2024) observed that companies that implement environmental management had better operational efficiency and a competitive edge. The investigation proved this. These data support the idea that green measures may boost market performance (Fosu, Fosu, et al., 2024). Khan et al. (2024) empirical findings highlight perceived green value's impact on corporate success. They also showed how environmental awareness can benefit stakeholders and society. According to empirical research, green value perception affects corporate performance. A Marrucci et al. (2023) study found that environmentally responsible companies are more profitable and loyal. The study supports the idea that environmentally sensitive practices improve an organization's success (Tian et al., 2023). Organizations that enhance stakeholders' environmental stewardship ratings should improve many performance measures. Thus, company operations may shift toward sustainability.

H1. *Green perceived value significantly influences organizational performance.*

The intricate relationship between green perceived value and corporate social responsibility (CSR) activities has been studied, giving unique insights into environmentally conscious firm behavior (Ali et al., 2023). Sarfraz et al. (2023) found a positive association between environmental performance and CSR initiatives, highlighting the significance of green perceptions in shaping social responsibility agendas. Singh et al. (2022) discovered that green enterprises are more devoted to CSR, using their green credentials to improve societal welfare and stakeholder engagement. These findings indicate that environmentally conscientious companies are more likely to undertake socially responsible CSR initiatives, promoting sustainable and inclusive cultures (German et al., 2023). Prior research suggests that green perceived value considerably affects corporate social responsibility actions. Research by Nureen et al. (2023) suggests a favorable correlation between environmental performance and CSR initiative adoption. Tian et al. (2023) found that environmentally conscientious companies prioritize social responsibility, showing a complex relationship between green attitudes and CSR action. Based on empirical evidence (Yue et al., 2023; Zhou et al., 2023), we hypothesize that firms with a favorable opinion of their environmental stewardship are more likely to implement socially responsible practices, supporting synergistic efforts to sustain the environment and society.

H2. *Green perceived value significantly influences the corporate social responsibility practices.*

Empirical research shows a complex relationship between corporate social responsibility (CSR), green perceived value, and firm performance (Liao et al., 2024). Financial performance is positively correlated with corporate social responsibility (CSR). Socially conscious initiatives may improve stakeholder communication and financial incentives (Zhang et al., 2024). Abbas et al. (2024) found that corporate social responsibility (CSR) is crucial to a company's long-term performance. This study shows that corporate social responsibility (CSR) moderates the association between

environmental views and organizational outcomes, highlighting the link between green activities and improved performance (Bhat et al., 2024). Previous empirical studies found that corporate social responsibility mediates the association between green perceived value and organizational success (Mehmood & Hanaysha, 2022; Yong et al., 2022). Companies have shown they can incorporate environmental consciousness into their operations through CSR programs (Tian et al., 2023). This article proposes an empirical hypothesis to explain sustainability-driven business behavior and the role of corporate social responsibility in mediating green perceptions and organizational success.

H3. *Corporate social responsibility significantly mediates the relationship of green perceived value and organizational performance.*

A microelectronics industry study found that rivals' pressure affects a business's behavior and performance (Alam & Islam, 2021). Ali et al. (2023) showed how competition affects market dynamics and strategy. They stressed the need of industry competition for an organization's success. Zhou et al. (2021) examined how competitive factors affect environmental management in various industries. The findings showed the complex link between competitive dynamics and environmental conditions (Xu et al., 2022). These empirical studies show how competitive pressure and environmental constraints affect microelectronics companies' performance (Nureen et al., 2023). Based on previous empirical research (Sarfraz et al., 2023; Tian et al., 2023), we hypothesize that microelectronics industry rivalry moderates green commodity value and organization performance. Yong et al. (2022), and others show that competitive dynamics affect organizational behavior and strategic efforts. Our hypothesis is that microelectronics industry rivalry moderates the relationship between perceived green value and organizational success. Ali et al. (2023) provides an empirical base for this hypothesis. Thus, organizations may need to promote environmental sustainability as a strategic requirement to stand out and gain a competitive edge. This research proposed the following hypothesis to explain the complex link between environmental perceptions, microelectronic performance, and industrial sector competitiveness.

H4. *Competitor pressure in the microelectronics industry significantly moderates the relationship of green perceived value and organizational performance.*

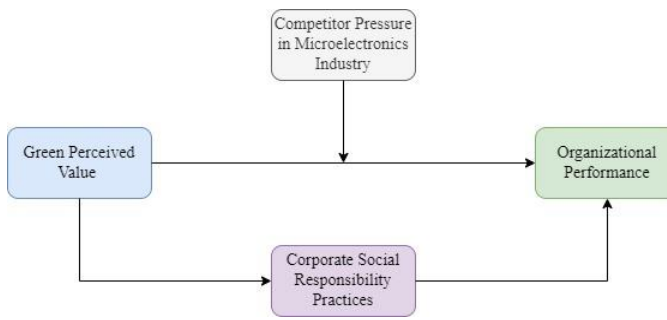

Figure 1: Conceptual Framework

Methodology

This research investigation was carried out in Saudi Arabia and focused on individuals employed in the microelectronics sector. To ensure proper representation, a meticulous selection process was conducted to sample 172 personnel from diverse industrial departments and hierarchical levels. The participants received comprehensive information regarding the research aims and were guaranteed the protection of their identify and privacy throughout the whole process of completing the online structured questionnaire. The study's findings indicated that the business's overall performance was assessed, along with the perceived value of green efforts, the adoption of corporate social responsibility (CSR) measures, and the impact of competitive pressure within the corporation. In order to assess these variables, we employed established criteria that were derived from previous studies. Moreover, environmental pressure was measured on four items scale in this research (Wang et al., 2021). Organizational culture was measure on seven items scale, adopted from the work of Huang, Lee and Chen (2022). The organizational performance was measured on an eight items scale in this research (Wang et al., 2021). The work of Chen (2013) and Huang et al. (2022) as used to measure the green perceived values of employees. The scale was based on four items. These scales' accuracy, practicality, and durability made them popular in Saudi Arabia's microelectronics sector. We polled staff about the company's efforts to be more environmentally friendly, socially responsible, competitive, and perform better.

Data was analyzed using STATA-SEM to determine variable correlations. The measurement model's validity and reliability were assessed using confirmatory factor analysis (CFA). This ensured the scales measured components accurately. This study used structural equation modeling (SEM) to assess the direct and indirect effects of competitive pressure, CSR initiatives, and perceived green value on business performance. Moderation and mediation were examined in the Saudi nanotechnology printing and coatings business. The study illuminates competitive dynamics, sustainable practices, and firm success. Researchers used bootstrapping to account for estimate biases and assess indirect effects. This study examined Saudi Arabia's microelectronics sector's organizational performance, competitive dynamics, and sustainability practices using analytical methods.

Results

Table 1 shows this study's variables' internal consistency and reliability using Cronbach's Alpha. Variables with Cronbach's Alpha coefficients above 0.7 are reliable. The green perceived value of a company has a Cronbach's Alpha coefficient of 0.824, indicating that stakeholders' environmental assessments are very consistent. With a Cronbach's Alpha coefficient of 0.898, corporate social responsibility responds consistently to all firm-level social responsibility indicators. The competitor pressure's Cronbach's Alpha coefficient of 0.882 suggests strong internal consistency and supports an accurate assessment of microelectronics enterprises' competitive pressures. Its Cronbach's Alpha coefficient of 0.900 makes organizational performance the most internally consistent indicator of success. These findings corroborate the study's validity and consistency and establish the framework for future research on green perceived value, corporate social responsibility, competitive pressure, and organizational performance in microelectronics.

Table 1: *Cronbach's Alpha.*

Variable	Cronbach's Alpha
Green perceived value	0.824
Corporate social responsibility	0.898
Competitor pressure	0.882
Organizational performance	0.900

Table 2 shows this study's variables' validity and reliability confirmations. The composite reliability ratings for each variable show the construct's outstanding dependability and internal consistency. The green perceived value composite dependability score of 0.782 shows that stakeholders consistently evaluate an organization's environmental initiatives. The composite reliability of the corporate social responsibility variable is 0.919, indicating company-wide consistency. The composite reliability value of 0.858 for competitor pressure implies strong internal consistency and lends credibility to microelectronics companies' competition pressure assessments. Organizational performance has the greatest composite dependability of 0.941 of all indicators used to evaluate organizational success.

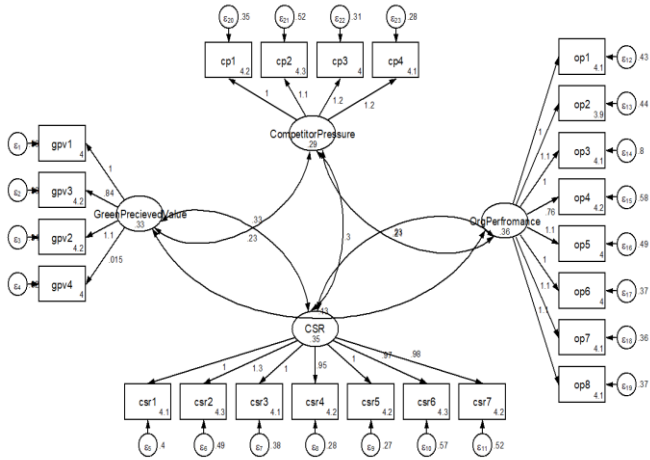

Figure 2: *Estimated Model.*

Average variance extracted (AVE) values for each variable demonstrate convergent validity. When AVE values above 0.5, the measurements capture a lot of concept variance. Green perceived value's AVE of 0.647 illustrates that stakeholders' environmental project perspectives converge to quantify the idea. The AVE of 0.587 for corporate social responsibility indicates good convergent validity. Competitive pressure items have convergent validity of 0.567, indicating good construct measurement. Finally, organizational performance has good convergent validity with an AVE of 0.610, capturing a wide spectrum of organizational success. These findings confirm the reliability and validity of this study's measurements, which will boost confidence in future variable association studies.

Table 2: *Validity and Reliability Confirmation.*

Variable	Composite Reliability	Average Variance Extracted (AVE)
Green perceived value	0.782	0.647
Corporate social responsibility	0.919	0.587
Competitor pressure	0.858	0.567
Organizational performance	0.941	0.610

Table 3 shows the measuring model validity CFA results. Each indicator's factor loadings show how well each item measures its construct. Each of the four green perceived value indicators (GPV1–GPV4) had substantial factor loadings from 0.716 to 0.813, indicating that stakeholders properly evaluate an organization's environmental actions. All competitor pressure indicators (CP1–CP4) accurately reflect microelectronics companies' competition pressure with strong factor loadings from 0.795 to 0.883. All corporate social responsibility indicators (CSR1–CSR7) accurately measure an organization's social responsibility, according to factor loadings of 0.656–0.924. All organizational performance indicators (OP1 to OP8) have considerable factor loadings (0.619 to 0.859), indicating that they accurately quantify many organizational success factors. These findings support measurement methodologies and support construct connection investigations.

Table 3: *Confirmatory Factor Analysis.*

Variable	Indicator	Original Sample
Green perceived value	GPV1	0.813
	GPV2	0.804
	GPV3	0.716
	GPV4	0.774
Competitor pressure	CP1	0.832
	CP2	0.858
	CP3	0.883
	CP4	0.795
Corporate social responsibility	CSR1	0.777
	CSR2	0.664
	CSR3	0.656
	CSR4	0.716
	CSR5	0.924
	CSR6	0.870
	CSR7	0.904
Organizational performance	OP1	0.855
	OP2	0.822
	OP3	0.679
	OP4	0.619
	OP5	0.738
	OP6	0.793
	OP7	0.836
	OP8	0.859

Table 4 displays OIM coefficient estimate and measuring item fitness data. The OIM coefficients evaluate each measurement item's reliability and relevance to its construct using standard errors, z-scores, p-values, and 95% confidence intervals. All indicators of green perceived value (GPV1, GPV2, GPV3, and GPV4) have statistically significant coefficients with z-scores from 8.876 to 10.763 and p-values below 0.001. Significant competitive pressure coefficients are reported for markers CP2, CP3, and CP4, with z-scores from 4.984 to 11.560 and p-values below 0.002. All corporate social responsibility indices (CSR2, CSR3, CSR4, CSR5, CSR6, and CSR7) exhibit statistically significant coefficients with z-scores from 8.499 to 12.689 and p-values below 0.001. The organizational performance indicators (OP1, OP2, OP3, OP4, OP5, OP6, OP7, OP8) had significant coefficients with z-scores from 10.323 to 15.101 and p-values below 0.001. These findings support the study's measuring methodology by showing the assessment items' validity and reliability in capturing variables.

Table 4: *Measurement Items Fitness Statistics.*

Measurement	OIM Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
GPV1	1	(constrained)				
GPV2	0.756	0.070	10.763	0.000	0.619	0.892
GPV3	0.556	0.062	8.876	0.000	0.434	0.678
GPV4	0.616	0.064	9.086	0.000	0.491	0.742
CP1	1	(constrained)				
CP2	0.885	0.081	10.852	0.000	0.726	0.845
CP3	0.324	0.065	4.984	0.000	0.198	0.451
CP4	0.819	0.077	11.560	0.002	0.674	0.831
CSR1	1	(constrained)				
CSR2	0.819	0.064	12.130	0.000	0.693	0.945
CSR3	0.686	0.059	11.050	0.000	0.571	0.801
CSR4	0.792	0.065	11.456	0.000	0.664	0.920
CSR5	0.717	0.084	8.499	0.000	0.553	0.882
CSR6	0.842	0.077	10.323	0.000	0.691	0.804
CSR7	0.904	0.071	12.689	0.000	0.766	0.844
OP1	1	(constrained)	15.101	0.000	0.766	0.794
OP2	0.768	0.062	11.739	0.000	0.646	0.890
OP3	0.841	0.059	13.491	0.000	0.725	0.767
OP4	0.745	0.071	13.996	0.000	0.700	0.901
OP5	0.863	0.063	12.967	0.000	0.740	0.797
OP6	0.728	0.066	10.473	0.000	0.598	0.857
OP7	0.766	0.066	11.130	0.000	0.638	0.895
OP8	0.867	0.068	12.168	0.000	0.734	0.810

Table 5 compares the estimated model to the baseline and saturated models for model quality and chi-square fit. The likelihood ratio test shows that the estimated model differs from the saturated model with a likelihood ratio of 10992.839 and a p-value of 0.001. A chi-square test comparing baseline versus saturated models demonstrates a significant difference with a value of 7293.552 and a p-value below 0.001. These findings show that the estimated model better matches data than the baseline and saturated models. The estimated and saturated models had SRMR values of 0.073 and 0.050. Even with a higher SRMR, the generated model fits the data well. These figures indicate that the estimated model accurately represents microelectronics industry variable relationships.

Table 5: *Model Goodness and Chi-square Fit Statistics.*

Fit statistic	Value	Description
Likelihood ratio	10992.839	model vs. saturated
p > chi2	0.001	
chi2_bs(2356)	7293.552	baseline vs. saturated
p > chi2	0.000	
	Saturated Model	Estimated Model
SRMR	0.050	0.073

Table 6 shows the model variables' R-square statistics, which show how much variance each independent variable explains. With an R-square value of 0.478 for green perceived value, the model's predictors explain 47.8% of stakeholders' perceptions regarding an organization's environmental actions. Corporate social responsibility has an R-square value of 0.200, implying independent variables explain 20% of an organization's socially conscious behaviors. Competition pressure has an R-square value of 0.441, indicating that the model's predictors explain 44.1% of microelectronics companies' pressures. These findings show that independent variables affect microelectronics sector organizational behavior, stakeholder perceptions, and competitive dynamics. They also show how much independent variables explain dependent variable variability.

Table 6: *R-Square Statistics.*

Variable	R Square
Green perceived value	0.478
Corporate social responsibility	0.200
Competitor pressure	0.441

The direct path analysis results are summarized in Table 7. According to this analysis, green perceived value directly impacts corporate social responsibility and organizational perfromance. It has z-scores, p-values, standard errors, and confidence ranges. It also shows confidence interval locations. The data suggests a high association between the company's performance and its perceived value of going green. The substantial z-score of 1.977 ($p < 0.001$) and standardized coefficient of 0.764 support this finding. One could argue that stakeholders' environmental assessments of a microelectronics supply chain company determine its performance.

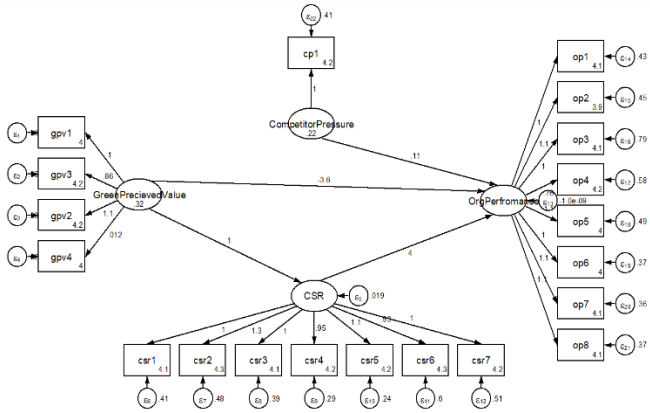

Figure 3: *Structural Model for Path Analysis.*

The survey also found a high association between customers' green perceived values and corporate social responsibility. The standardized coefficient of 0.624 suggests a strong impact. Z-score of 2.637 with p-value less than 0.001 supports this conclusion. For instance, environmentally conscious organizations are more likely to adopt socially responsible practices. Theoretical frameworks show how social and environmental sustainability projects are linked. This research shows that green value can affect company behavior and performance and advance microelectronics CSR initiatives.

Table 7: *Direct Path Analysis.*

	OIM Coef.	**Std. Err.**	**z**	**P>|z|**	**[95% Conf. Interval]**	
Green perceived value significantly influences organizational performance.	0.764	0.425	1.977	0.000	0.585	0.740
Green perceived value significantly influences the corporate social responsibility practices.	0.624	0.073	2.637	0.000	0.482	0.767

In the microelectronics business, the relationship between green perceived value and organizational performance is mediated by corporate social responsibility (CSR) programs and competitive constraints. Table 8 makes these consequences more clear. The study concludes that there is a strong correlation between business success and corporate social responsibility. The standardized coefficient of 0.237 and significant z-score of 3.468, with a p-value less than 0.001, show the strength and relevance of this association. CSR can close the performance gap caused by stakeholders' different environmental views. The perceived green value is strongly correlated with

organizational performance; and competition in the microelectronics industry affects this relationship. A statistically significant standardized coefficient of 0.282 with a z-score of 3.743 and p-value of less than 0.001 quantifies the impact. The results show that green initiative competition greatly impacts a company's performance. When creating a sustainability-driven strategy, external market factors must be considered. The results show how social, environmental, and competitive factors affect microelectronics sector organizational outcomes.

Table 8: *Mediating and Moderating Path Analysis.*

	OIM Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Corporate social responsibility significantly mediates the relationship of green perceived value and organizational performance.	0.237	0.086	3.468	0.001	0.069	0.405
Competitor pressure in the microelectronics industry significantly moderates the relationship of green perceived value and organizational performance.	0.282	0.056	3.743	0.000	0.172	0.392

Discussion

The results of this research offer an important perspective of the intricate relationship between the competitive dynamics, organizational performance, and sustainability practices within the microelectronics industry. This research has shed light on how competitive pressure, organizational green value perceptions, and CSR initiatives affect results. The confirmation of all four hypotheses signifies the successful attainment of this objective. The findings emphasize the importance of adopting a comprehensive approach to sustainability, including several elements that impact an organization's performance and conduct. This study examines the relationship between organizational outcomes and sustainability initiatives, contributing to our comprehension of the strategic significance of sustainability in the microelectronics industry, particularly in terms of attaining a competitive edge and accomplishing long-term prosperity.

The study's findings corroborate the initial and subsequent hypotheses by showing how important it is for microelectronics manufacturers to value CSR and green practices for the sake of their overall performance. Sustainability measures boost stakeholder relations and financial performance, the study found. After a preliminary experiment, it was shown that green activities' perceived value affected organization performance. How stakeholders view the organization's environmental sensitivity affects its outcomes. Improved stakeholder perception of a company's environmental activities boosts its chances of success. Research shows that green activities improve financial viability, customer loyalty, and reputation in organizations with big environmental footprints (Tian et al., 2023).

The second premise shows that corporate social responsibility mediates the relationship between green perceived value and organizational performance. The above shows how sustainability strategies benefit companies. The study shows how green certifications can boost company social responsibility performance, reputation, and stakeholder engagement. According to a study (Marrucci et al., 2023), organizations can gain a competitive edge by maximizing natural resource use and adapting management to sustainability restrictions. Thus, if the second hypothesis is correct, corporate social responsibility (CSR) affects how the microelectronics industry converts its perceived green value into organizational performance.

Accepting the third and fourth hypothesis shows how corporate social responsibility (CSR) activities and competitive pressure affect green perceived value and organizational performance in microelectronics. The findings demonstrate the complicated link between organizational efficiency, sustainability, and competitive dynamics. According to the third theory, competition pressure greatly impacts a company's success and green product value. This shows how much competition affects environmental sustainability initiatives. Businesses in highly competitive markets must often differentiate themselves by stressing sustainability and performance. An earlier study (Tian et al., 2023) found that industry competition affects an organization's behavior and strategic outcomes.

Confirming the fourth hypothesis shows how corporate social responsibility moderates green perceived value and organizational performance. This shows how sustainable practices can help microelectronics manufacturers compete. Corporate social responsibility (CSR) strategies should include environmentally friendly approaches to increase stakeholder engagement, business reputation, and financial success, according to the report. According to the resource-based approach and institutional theory, sustainability is key to organizational performance and competitive advantage (Yong et al., 2022). Thus, corporate social responsibility reduces the impact of perceived green value on microelectronics sector organizational performance. Applying the fourth hypothesis yields this result.

Since all four of the study's hypotheses were confirmed, microelectronics industry sustainability measures may affect company efficacy. According to the report, green initiatives and CSR efforts improve an organization's financial performance, reputation, and stakeholder relationships. Competitive limitations and corporate social responsibility considerably affect a company's success and sustainability initiatives. The study emphasizes the importance of conceptualizing and incorporating social, environmental, and economic factors into company decision-making. Performance and sustainability in microelectronics and the impact of sustainable practices on competitive advantage may be studied.

Conclusion

The research's findings reveal the complex relationship between competitive dynamics, organizational performance, and sustainability in microelectronics. The study found that green perceived value and corporate social responsibility actions affect business outcomes, validating four assumptions. Microelectronics firms' financial performance, competitiveness, and stakeholder engagement improve when they embrace environmentally friendly practices. Our emphasises industry sustainability even more.

The study's findings are reinforced by the fact that CSR mediates sustainability metrics and competitive pressure moderates them. A thorough plan that incorporates the organization's internal capabilities and external market considerations is crucial. The research uses empirical data and theoretical frameworks like the resource-based approach and institutional theory to investigate microelectronics sector sustainability-driven business strategies. In a changing business environment, sustainable policies improve resilience, innovation, and long-term performance. The findings may help microelectronics companies become more sustainable and competitive. Businesses can grow market share, win over stakeholders, and achieve societal goals by promoting eco-friendly activities, corporate social responsibility, and addressing competing risks. Other elements that moderate sustainability strategies and their impact on an organization's success need further study. Extended-duration studies show how sustainability parameters affect companies' financial stability, market share, and strategic skills.

Implications of the study

This study examines how competitive dynamics, sustainability, and organizational effectiveness interact in microelectronics. The resource-based approach and institutional theory support sustainability as a competitive advantage. This study shows that green perceived value and CSR practices improve organizational outcomes, showing how organizations may use environmental and social sustainability activities to improve market positioning, reputation, and financial success. Competition has a big impact, hence sustainability-driven strategy theoretical frameworks must include external market dynamics. Long-term corporate performance requires aligning competitive realities with environmental policies. Verifying corporate social responsibility (CSR) as an intermediate between environmental friendliness and company performance improves sustainability program research. These findings underline the need for a complete sustainability management plan that considers internal resources, external market constraints, and social and environmental sustainability activities. This research's theoretical implications explain microelectronics' sustainability-focused business strategies' strategic imperatives and procedures. This will inform future research and evidence-based sustainable management initiatives.

This discovery has several applications for microelectronics firms seeking productivity and sustainability. The enormous impact green perceived value has on organizational performance emphasizes the necessity to promote environmental activities to stakeholders. Through transparent and effective communication that shows their commitment to environmental sustainability, firms can strengthen their brand image, attract environmentally concerned customers, and win over stakeholders. Corporate social responsibility (CSR) initiatives connect environmentally friendly projects to company success. Sustainability ideals can be integrated into business strategy, operations, and decision-making to encourage social responsibility and environmental care. The fact that competition pressure moderates shows that sustainability measures must adjust to industrial competitiveness. Looking at their market and competitors' sustainability policies and finding strategic ways to differentiate themselves through innovative environmental activities can give businesses a competitive edge and reduce competition threats. Firms should consider social, economic, and environmental concerns while making strategic decisions to

promote sustainable management. This includes solving social issues, involving stakeholders, adopting green technologies, and linking sustainability to commercial goals. The findings enable microelectronics companies develop sustainability strategies that boost stakeholder value, industry longevity, and commercial performance. By making sustainability a strategic goal and using this information to make decisions, firms can lead in sustainable business practices, benefit society and the environment, and gain a competitive edge and sustainable growth.

Limitations and Future Research Directions

Despite its worries, this study has significant drawbacks. Cause is difficult to ascertain due to cross-sectional data in the study. The dynamic links between competitive dynamics, organizational success, and sustainable practices could be studied throughout time. Self-reported data may increase variable associations due to method bias. Objective performance measurements or multi-source data collecting could fix issue and improve relationship analysis. The results' microelectronics focus may be a restriction. Future studies may examine these links across industries to determine their stability. Finally, the study's sample size and makeup may limit generalizability. Extensive study with different sample sizes may improve external validity and understanding.

The study's findings suggest several research avenues. First, studying sustainable habits and organizational success may reveal the mechanisms. Future research may examine how organisational culture, leadership styles, and internal structures affect sustainability project adoption and effectiveness. Industry standards, regulatory frameworks, and technical advances may explain microelectronics context-driven sustainability activities. Examining the boundary conditions and contingent factors that control competitive dynamics, organizational performance, and sustainability practices can reveal the optimal sustainability environments. Business size, market positioning, and geographic location may affect sustainability activities, revealing key success factors. Finally, longitudinal study on the long-term benefits of sustainability initiatives on organizational performance may help organizations implement sustainable business practices and adapt to changing market circumstances.

Acknowledgement

This work was supported through the Ambitious Funding track by the Deanship of Scientific Research, Vice Presidency for Graduate Studies and Scientific Research, King Faisal University, Saudi Arabia [Grant 5817]

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Appendix 1

Environmental Pressure:

1. To what extent do you perceive environmental regulations and policies as challenging for your organization?
2. How much pressure does your organization face from environmental advocacy groups or stakeholders?
3. In your opinion, how competitive is the environmental performance of your organization compared to industry peers?
4. How significantly do environmental concerns impact the strategic decision-making process within your organization?

Organizational Culture:

1. How strongly does your organization prioritize innovation and creativity in its culture?
2. To what extent does your organization promote teamwork and collaboration among employees?
3. How supportive is the leadership within your organization in fostering employee growth and development?
4. How open and transparent is communication within your organization?
5. How strongly does your organization emphasize ethical behavior and corporate values?
6. How flexible is your organization in adapting to changes in the external environment?
7. To what extent does your organization promote a sense of inclusivity and diversity among employees?

Organizational Performance:

1. How satisfied are you with your organization's financial performance?
2. How well does your organization meet its strategic objectives and goals?
3. How effective is your organization in managing its resources and operations?
4. How satisfied are you with the quality of products/services offered by your organization?
5. How responsive is your organization to changes in customer needs and market trends?
6. How well does your organization manage risks and uncertainties in the business environment?
7. How satisfied are you with the level of employee engagement and morale within your organization?
8. How would you rate the overall performance of your organization compared to competitors in the industry?

Green Perceived Values of Employees:

1. To what extent do you believe your organization is committed to reducing its environmental footprint?
2. How important do you think it is for your organization to implement environmentally friendly practices?

3. How much do you value environmental sustainability in your personal and professional life?
4. How well do you think your organization communicates its environmental initiatives and efforts to employees?