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Leadership and Employee Effects on Financial and Non-Financial Performance: The Moderating Role of Organisational Culture in Malaysia's E&E Manufacturing Sector

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Abstract

This empirical study examines the impact of leadership and employees on both financial and non-financial performance within Malaysia's Electrical and Electronics (E&E) manufacturing sector. It further investigates how three dimensions of organisational culture (bureaucratic, innovative, and supportive) moderate the relationship between leadership and employee outcomes. Data were collected from 155 E&E manufacturing companies through a structured questionnaire survey. Structural Equation Modelling (SEM) was applied to validate the conceptual framework and test the hypothesised relationships. The results reveal that employee outcomes significantly and positively influence both financial and non-financial performance, whereas leadership exhibits no significant direct effect. Organisational culture demonstrates mixed moderating effects. A low level of bureaucratic culture positively moderates the leadership–employee relationship, while a high level of supportive culture significantly strengthens it, and innovative culture shows no significant influence. These findings underscore the critical role of human capital and cultural context in shaping sustainable organisational performance. The study extends the management and social science literature by providing empirical insights into how E&E manufacturers in emerging economies can align leadership, workforce engagement, and organisational culture to enhance both financial and non-financial outcomes. Practical implications for policymakers and industry leaders are also discussed.

Keywords: Leadership, Organisational Culture, Financial Performance, Non-Financial Performance, E&E

Introduction

Sustainability has become a central concern in today's business environment, prompting organisations to adopt managerial and strategic approaches to address complex challenges. Economic, environmental, social, and cultural practices interact in multifaceted ways,

significantly influencing organisational success and reputation (Ciuciuc et al., 2025). Leadership and regulatory frameworks play a pivotal role in driving sustainable business adoption, while organisational performance is increasingly viewed through a lens that integrates both financial and non-financial outcomes (Kovilage, 2020; Hossain et al., 2023). Recent studies show that non-financial outcomes such as innovation capability, employee engagement, and operational efficiency are critical drivers of sustainable organisational performance (Ibrahim et al., 2022; Qalati et al., 2022).

Despite these insights, many studies still focus primarily on financial indicators, overlooking the contribution of non-financial dimensions to long-term organisational health and resilience (Rahmaniati & Ekawatia, 2024; Chams, García-Blandon, & Hassan, 2021). Understanding both types of outcomes provides a more comprehensive view of performance, particularly in sectors undergoing rapid technological transformation. Furthermore, evidence suggests that considering both financial and non-financial performance allows managers to anticipate challenges and strategically allocate resources in dynamic industrial settings (Mahohoma, 2024).

Human capital, especially leaders and employees, profoundly shapes organisational performance. Leadership positively affects both financial and non-financial outcomes, often indirectly through employee engagement, self-efficacy, and other psychological mechanisms (Al-Sada, Al-Esmael, & Faisal, 2016; Vuong, Khanh & Hung, 2023). Organisational culture further moderates this relationship, with different dimensions exerting distinct effects on employee and organisational outcomes (Koranteng et al., 2022; Aggarwal, 2024).

The overall aim of this study is to examine how leadership and employee outcomes jointly influence both financial and non-financial organisational performance, and to assess the moderating role of distinct organisational culture dimensions like bureaucratic, supportive, and innovative within Malaysia's Electrical and Electronics (E&E) sector. This sector, Malaysia's second-largest contributor to GDP, has experienced stagnant growth over the past two decades. Understanding human and cultural factors in this context provides valuable insights for enhancing performance in a fast-evolving industrial environment.

Accordingly, this study addresses the following research questions:

RQ1: What is the relationship between leadership and employee outcomes in Malaysia's E&E manufacturing companies?

RQ2: What is the relationship between leadership and financial performance in Malaysia's E&E manufacturing companies?

RQ3: What is the relationship between leadership and non-financial performance in Malaysia's E&E manufacturing companies?

RQ4: What is the relationship between employee outcomes and financial performance in Malaysia's E&E manufacturing companies?

RQ5: What is the relationship between employee outcomes and non-financial performance in Malaysia's E&E manufacturing companies?

RQ6: How do the dimensions of organisational culture (bureaucratic, supportive, and innovative) moderate the relationship between leadership and employee outcomes in Malaysia's E&E manufacturing companies?

Literature Review

Theoretical Framework

According to Freeman's (1984) stakeholder theory, firms should focus on creating value for all stakeholders rather than solely for shareholders. Freeman defined stakeholders as any individual or group that can affect, or be affected by, the achievement of an organization's objectives. Applying this broad perspective, a wide range of parties can be considered stakeholders within Malaysia's E&E manufacturing sector.

In this study, leaders and employees are identified as key internal stakeholders who play a pivotal role in driving organisational success and sustainability. Rahmaniati and Ekawati (2024) emphasised that stakeholders are increasingly pressuring organisations to embrace sustainable and socially responsible practices. As a result, companies are expected to enhance both financial and non-financial performance outcomes (Crifo et al., 2019), encompassing aspects such as employee well-being, innovation capability, environmental stewardship, and social responsibility.

Stakeholder theory further emphasizes the significance of transparency, accountability, and active stakeholder engagement in organizational governance. Consequently, companies are encouraged to report both financial and non-financial information to meet the varied expectations of their stakeholders (Ahmad, Mobarek, & Roni, 2021). Within this context, leadership and organisational culture become critical in shaping stakeholder-oriented strategies and aligning internal behaviours with external demands (Fonseca, 2021; Tay & Fong, 2022).

Recent research further supports the integration of Stakeholder Theory with sustainability-focused models. For instance, Salleh, Sa'at and Hamid (2024) and Ciuciuc et al. (2025) demonstrate that leadership commitment and cultural alignment significantly influence sustainability-driven performance, particularly in dynamic manufacturing environments. Similarly, Yaqub and Alsabban (2024) note that technological transformation under Industry 4.0 intensifies stakeholder expectations for ethical leadership and inclusive workforce engagement.

Accordingly, this study adopts Stakeholder Theory as its core theoretical foundation. The proposed framework and hypotheses are developed in accordance with its principles, emphasising the interplay among leadership, employee outcomes, organisational culture, and sustainable organisational performance. This theoretical lens provides a robust basis for understanding how internal stakeholders and cultural dynamics contribute to long-term value creation across financial and non-financial dimensions.

Hypothesis Development

Previous studies have consistently highlighted leadership as a critical determinant of employee performance and engagement. He et al. (2011) asserted that leadership directly influences employees' attitudes and behaviours, ultimately fostering positive organisational outcomes. Similarly, Matondang et al. (2018) confirmed that leadership exerts a significant influence on employee performance in Indonesia's manufacturing sector, underscoring the importance of effective leader–employee relationships.

Effective leadership involves understanding and fulfilling the needs of internal stakeholders, particularly employees, by ensuring satisfaction, empowerment, and motivation. Liker (2004) and Gittell (2003) illustrated through Toyota and Southwest Airlines that organisations prioritising internal customer satisfaction cultivate more dedicated and productive employees, leading to superior service quality and organisational performance. A study by Fok-Yew and Hamid (2021) in Malaysia's manufacturing industry also concluded that leadership positively affects workforce performance. Likewise, Gui, Lei and Le (2022) and Cherrafi et al. (2025) reaffirm that leadership fosters commitment, innovation, and collaboration among employees, which in turn strengthens organisational sustainability and competitiveness.

Based on these findings, leadership is expected to play a significant role in enhancing employee outcomes within Malaysia's E&E manufacturing sector. Therefore, the following hypothesis is proposed:
H1: *Leadership will have a positive effect on employee outcomes.*

In most organisations, the leadership team plays a critical role in influencing company achievements, particularly in both financial and non-financial dimensions. In other words, effective leadership is often associated with superior outcomes across these performance areas. A prior study by Suriyankietkaew (2021) demonstrated that emergent leadership has a favourable effect on stakeholder satisfaction and long-term financial performance, which helps small entrepreneurial businesses in Thailand remain sustainable. The findings indicated that certain leadership characteristics serve as significant predictors of both financial outcomes and stakeholder satisfaction. Moreover, the study emphasized the necessity of evaluating multiple performance indicators when assessing corporate sustainability, with a particular focus on financial performance and stakeholder satisfaction. Accordingly, the present study adopts these two dimensions as proxies for measuring sustainable performance outcomes.

Rehman et al. (2021) conducted a study involving 385 mid-level employees from Pakistan's construction industry to explore how responsible leadership influences organisational outcomes. They described responsible leadership as a decision-making approach that emphasises sustainability and considers the needs of all stakeholders, including the broader society and future generations. The results indicated that responsible leadership positively affects both financial and environmental performance. The authors also highlighted the value of extending such research to other industries and national contexts to strengthen theoretical validity and result generalization.

In support of this perspective, Khaw et al. (2022) highlighted that effective leadership not only drives financial results but also contributes significantly to non-financial outcomes. Based on these insights, the following hypotheses are developed:
H2: *Leadership will have a positive effect on financial performance.*
H3: *Leadership will have a positive effect on non-financial performance.*

Manufacturing organisations are increasingly directing their efforts toward enhancing employee engagement, recognizing its critical role in driving organisational success. Empirical evidence from global surveys highlights a strong and positive correlation between employee

engagement, individual performance, and overall business outcomes (Antony, Arulraj, & Umamaheswari, 2018). In support of this, Koshksaray et al. (2020) investigated the influence of employee performance on non-financial results in addition to driving the financial achievement of a major Iranian bank. The study found that employee performance exerted a direct and significant influence on financial outcomes, while also positively affecting non-financial dimensions including service quality and customer satisfaction. These findings reinforce the notion that employees are integral to organisational performance, emphasizing the strategic importance of fostering a high-performance workforce to attain sustainable competitive advantage.

Peng and Prybutok (2015) demonstrated that employee performance exerts a significant positive effect on organisational success within China's municipal government sector. Their study revealed that performance outcomes extend beyond financial metrics to include various non-financial aspects such as employee satisfaction, service quality, productivity, environmental responsibility, and customer satisfaction. Similarly, Nagiah and Suki (2024) highlighted that fostering an employee engagement culture contributes to higher productivity, which in turn enhances both financial and non-financial achievements.

Drawing from these insights, the current study aims to examine how employee-related outcomes influence financial and non-financial performance within the E&E manufacturing sector in Malaysia. Therefore, the following hypotheses are proposed:
H4: *Employee outcomes will have a positive effect on financial performance.*
H5: *Employee outcomes will have a positive effect on non-financial performance.*

Wallach (1983) asserts that distinct lines of power and responsibility are characteristics of bureaucratic cultures. In such a culture, work processes tend to be hierarchical, systematic, and compartmentalized. Cameron and Quinn (1999) similarly conceptualized bureaucratic culture as hierarchical, noting that managers operating within this context often excel at control, administration, coordination, and maintaining operational efficiency. However, previous research has indicated that bureaucratic culture is negatively associated with employee commitment, job involvement, and job satisfaction (Chen, 2004). In contemporary organisational settings, employees increasingly prefer autonomy, empowerment, and open cultures over rigid hierarchical structures. As a result, leadership teams are encouraged to minimize or eliminate bureaucratic tendencies to enhance employee satisfaction and organisational performance.

In this regard, Erkutlu (2021) found that the positive correlation between shared leadership and proactivity of the team is moderated by a low level of bureaucratic organisational culture. Conversely, this relationship weakens in environments with high levels of bureaucratic culture. In other words, bureaucratic structures tend to diminish the perceived effectiveness of shared leadership, thereby reducing proactivity among team members. Based on these insights, the following hypothesis is proposed:
H6: *The positive relationship between leadership and employees will be stronger under a low level of bureaucratic culture compared to a high level.*

Wallach (1983) described individuals who thrive in innovative cultures as results-oriented, creative, open-minded, and willing to take risks, often finding motivation in challenge and

enterprise. Such environments naturally attract individuals who value dynamism and experimentation. Recent studies have reinforced this notion, suggesting that innovative culture acts as a catalyst for employee creativity and commitment. For instance, Kareem, Aliyu, and Salimon (2024) found that when innovation is embedded as a core organisational value, employees are more inclined to engage in creative problem-solving and innovation-related behaviours. Similarly, Valentina and Ileana (2017) observed that innovative culture supports organisational initiatives by motivating employees to pursue novel and beneficial improvements that enhance overall firm performance.

In technology-driven organisations, leadership plays a pivotal role in cultivating a climate that nurtures innovation and creativity aimed at improving both customer satisfaction and organisational performance. Within Malaysia's E&E manufacturing sector, which are continuously engaged with technological advancements, fostering an innovation-oriented culture is essential. Fonseca (2021) emphasised that a genuine culture of innovation not only drives continuous improvement but also inspires individuals and creates sustainable value. Accordingly, when leadership actively promotes innovation, it may strengthen the relationship with employees by fostering shared goals, psychological empowerment, and proactive engagement.
In line with these insights, the following hypothesis is proposed:
H7: *The positive relationship between leadership and employees will be stronger under a high level of innovative culture compared to a low level.*

Supportive culture fosters a people-oriented, trusting, and collaborative work environment that encourages teamwork and interpersonal connection (Wallach, 1983). In such contexts, individuals tend to be fair, empathetic, and cooperative, forming workplace relationships that resemble the cohesion of an extended family. These cultures are characterised by openness, mutual respect, safety, and harmony, where employees recognise and celebrate both team and individual achievements (Marks, Mathieu, & Zaccaro, 2001). The presence of a supportive culture therefore strengthens leader–follower relationships by nurturing trust, social cohesion, and a shared sense of purpose, ultimately reinforcing team effectiveness and organisational resilience.

Empirical evidence underscores this moderating effect. Erkutlu (2012) found that the positive association between leadership and team proactivity is significantly enhanced in organisations with high levels of supportive culture. Similarly, Mete (2017) reported that supportive and innovative cultures foster greater employee satisfaction and engagement compared to bureaucratic environments. These findings suggest that supportive culture serves as a contextual enabler that amplifies the effectiveness of leadership by promoting psychological safety and cooperative behaviour among employees. Based on the preceding literature, the following hypothesis is proposed:
H8: *The positive relationship between leadership and employees will be stronger under a high level of supportive culture compared to a low level.*

On the basis of the developing hypotheses, the conceptual research model is presented in Figure 1. This model illustrates the proposed relationships among the key constructs, highlighting both the direct and moderated pathways. Specifically, it posits that leadership exerts a direct influence on employee outcomes, as well as on financial and non-financial

performance. In addition, employee outcomes are expected to positively influence both financial and non-financial organisational results. Furthermore, the model incorporates the moderating role of organisational culture, categorized into three distinct dimensions: bureaucratic, innovative, and supportive in shaping these relationships. Overall, this comprehensive framework provides the foundation for empirically examining the dynamic interactions between leadership, employee outcomes, organisational culture, and sustainable performance within Malaysia's E&E manufacturing sector.

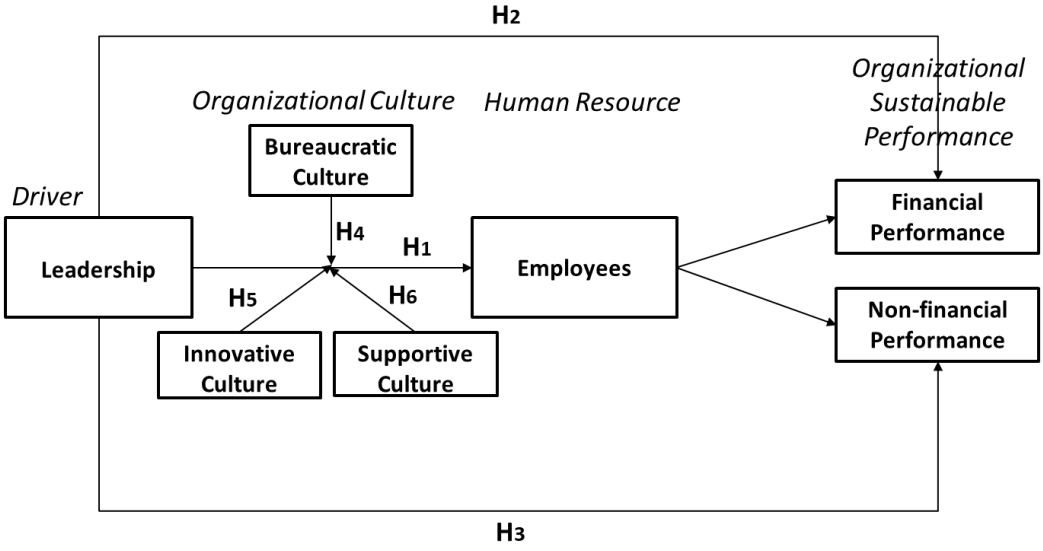

Figure 1: Research Model

Research Methodology

Research Design and Procedures

This study adopted a quantitative and empirical research design employing a structured questionnaire survey. Data were collected using a combination of electronic mail distribution and the drop and collect method, which facilitated both wider coverage and higher response reliability. The target population comprised organisations operating within E&E manufacturing sector in Malaysia. The unit of analysis was the organisation, represented by a single key informant, typically a senior manager or manager involved in operations or continuous improvement activities, who responded on behalf of the firm. This approach ensured that the responses accurately reflected organisational-level perspectives relevant to leadership, employee outcomes, and performance.

Selection of Samples

The 53rd Federation of Malaysian Manufacturers (FMM) Industry Directory served as the primary sampling frame (FMM, 2023). To ensure adequate representation across different industry segments, a stratified random sampling technique was employed. The population was divided into four main subsectors within the E&E manufacturing industry: consumer electronics, industrial electronics, electronic components, and electrical products (MOSTI, 2023), as shown in Table 1. Within each stratum, simple random sampling was subsequently applied to select the participating organisations. This two-stage sampling design minimized selection bias and enhanced representativeness of the E&E sector as a whole.

Table 1
Sub-sectors of E&E Sector
Source: Ministry of Science, Technology and Innovation (MOSTI, 2023)

Sub-sectors	**Products/ Activities**
Consumer electronics	TV/radio receivers, media players, speakers, electronic games, embedded systems.
Industrial electronics	Data storage devices, office equipment, computers and peripherals, telecommunication devices, transmitters and routers.
Electronic components	LED substrates, integrated circuit (IC) design, wafer fabrication, precision plastic parts, epitaxy manufacturing, printed circuit boards (PCBs).
Electrical products	Solar cells, modules and balance of systems (BoS), electric motors, generators and transformers, domestic appliances, wires, cables and batteries, lighting equipment and luminaires.

Measurements
The study variables were measured using items adapted or adopted from previously validated scales. Table 2 summarises the constructs and corresponding sources used in the survey instrument.

Table 2
Survey Instrument Construct

Section	**Title**	**Number of Items**	**Original Sources**	**Original Scale**
A	*Measures of Independent Variables*			
	Leadership	4	Yizhong & Sangbok (2009).	Six-point Likert
B	Employees	4	Yizhong & Sangbok (2009).	Six-point Likert
	Marker variable	3	Oreg (2003)	Seven-point Likert
C	*Measures of Moderating Variables*			
	Bureaucratic culture	4	Wallach (1983).	Four-point Likert
	Innovative culture	4		
	Supportive culture	4		
D	*Measures of Dependent Variables*			
	Sustainable Organisational Performance			
	Financial performance	5	Kafetzopoulos et al. (2018).	Seven-point Likert
	Non-financial performance	6	Shafiq et al. (2017)	Seven-point Likert

Analysis Methods
Partial Least Squares Structural Equation Modelling (PLS-SEM) was adopted to evaluate the research framework and examine the hypothesised relationships, given its suitability for analysing complex causal models. The data analysis utilised the most recent versions of the Statistical Package for the Social Sciences (SPSS 30.0) and SmartPLS 4.0. The analytical process comprised two main phases. First, SPSS was employed for preliminary data screening, which

involved data cleaning, handling of missing values, and assessing potential common method variance (CMV) through Harman's single-factor test. Descriptive statistics were also produced during this phase. In the second phase, SmartPLS 4.0 was used to assess the measurement model, covering validity and reliability, and to test the structural model for hypothesis verification.

Empirical Results

A total of 163 organisations initially participated in the survey. After data screening and the removal of incomplete responses, 154 valid cases were retained for analysis. Respondents represented all four sub-sectors of Malaysia's E&E manufacturing industry. The majority of responses were obtained from the electronic components sector (46.8%), followed by industrial electronics (20.1%), electrical products (17.5%), and consumer electronics (15.6%). The distribution of respondents across the E&E sub-sectors is presented in Table 3.

Table 3
Respondents in E&E sub-sector

No	Sector	Frequency	Percent	Valid Percent	Cumulative Percent
1	Consumer electronics	24	15.6	15.6	15.6
2	Electrical products	27	17.5	17.5	33.1
3	Electronic components	72	46.8	46.8	79.9
4	Industrial electronics	31	20.1	20.1	100
	Total	154	100.0	100.0	

Table 4 presents the demographic profile of the respondents. The majority of participants were male (70.8%), while females represented 29.2% of the total sample. In terms of age distribution, 18.8% of respondents were between 21 and 35 years old, 42.9% fell within the 36–45 age group, and 38.3% were aged 46 years or older. Concerning work tenure, 29.9% had up to five years of service, 22.7% had between six and ten years, 13.6% had eleven to fifteen years, and 33.8% reported more than sixteen years of experience in their current organisations.

In terms of organisational position, most of respondents (41.6 percent) were assistant managers or managers, followed by senior managers at 21.4 percent. Senior executives and senior engineers accounted for 14.6 per cent of the sample. Deputy general managers, general managers, and directors made up 12.3 per cent, while professionals, comprising consultants, specialists, advisers, and financial controllers, contributed 9.1%. Lastly, 1.3% of the respondents were section heads or team leads.

Table 4
Respondents' Profile

Characteristics		Frequency (N = 154)	Per cent (Total 100%)
Gender:	Male	109	70.8
	Female	45	29.2
	Total	154	100
Age:	Between 21 to 35 years	29	18.8
	Between 36 to 45 years	66	42.9
	46 years and above	59	38.3
	Total	154	100
Number of years working in current company:	5 years and below	46	29.9
	Between 6 to 10 years	35	22.7
	Between 11 to 15 years	21	13.6
	16 years and above	52	33.8
	Total	154	100
Position held:	Senior Executive / Senior Engineer	22	14.3
	Team Lead / Section Head	2	1.3
	Assistant Manager / Manager	64	41.6
	Senior Manager	33	21.4
	Deputy General Manager/General Manager/Director	19	12.3
	Professional / Specialist / Adviser / Financial Controller	14	9.1
	Total	154	100

Assessment of the Measurement Model

The results indicate that all reliability and validity requirements were adequately satisfied. The outer loading of each indicator was higher than the Chin, Peterson, and Brown (2008) indicated cutoff value of 0.60. The constructs' convergent validity was supported by the average variance extracted (AVE) values, which were over than the threshold value of 0.50 (Hair et al., 2017). Additionally, the composite reliability (CR) values, also known as rho_C, met the minimum acceptable level of 0.70 (Bagozzi & Yi, 1988), and the Cronbach's Alpha (CA) values surpassed the proposed threshold of 0.70 (Hair et al., 2010). Table 5 presents the comprehensive findings for CA, CR, and AVE.

Table 5
Validity and Reliability Values

Variable	Item	Outer Loading	Cronbach's Alpha	CR (rho_C)	AVE
Leadership	L1	0.824	0.849	0.898	0.687
	L2	0.838			
	L3	0.828			
	L4	0.826			
Employees	W1	0.868	0.911	0.938	0.790
	W2	0.862			
	W3	0.894			
	W4	0.929			
Bureaucratic culture	BC1	0.610	0.701	0.803	0.582
	BC2	0.808			
	BC4	0.863			
Innovative culture	IC1	0.615	0.778	0.847	0.583
	IC2	0.774			
	IC3	0.778			
	IC4	0.866			
Supporting culture	SC1	0.755	0.706	0.803	0.507
	SC2	0.669			
	SC3	0.640			
	SC4	0.775			
Financial performance	F1	0.898	0.912	0.934	0.739
	F2	0.877			
	F3	0.869			
	F4	0.850			
	F5	0.801			
Non-financial performance	NF1	0.709	0.855	0.891	0.578
	NF2	0.731			
	NF3	0.755			
	NF4	0.771			
	NF5	0.804			
	NF6	0.787			

Note: BC3 was deleted due to low loading.

Structural Model Testing

Table 6 summarises the results of the structural model analysis. Leadership had a significant positive impact on employee outcomes ($\beta = 0.515$, $p < 0.01$), thereby supporting H1. However, its direct effects on financial performance ($\beta = –0.262$, $p > 0.05$) and non-financial performance ($\beta = –0.248$, $p > 0.05$) were not significant, indicating that H2 and H3 were not supported. In contrast, employee outcomes showed significant positive effects on both financial performance ($\beta = 0.377$, $p < 0.01$) and non-financial performance ($\beta = 0.244$, $p < 0.01$), lending support to H4 and H5.

Moderation analysis using bootstrapping revealed that low levels of bureaucratic culture significantly strengthened the relationship between leadership and employee outcomes ($\beta = 0.207$, $p < 0.05$), supporting H6. Similarly, a high level of supportive culture also enhanced this relationship ($\beta = 0.175$, $p < 0.05$), providing support for H8. Conversely, the moderating role of innovative culture was not significant ($\beta = –0.069$, $p > 0.05$), thus H7 was not supported.

Table 6
Hypothesis Testing Results

No.	Hypotheses	**Decision**
H1	Leadership will have a positive *effect* on employee outcomes.	Supported
H2	Leadership will have a positive *effect* on financial performance.	Not supported
H3	Leadership will have a positive *effect* on non-financial performance.	Not supported
H4	Employee outcomes will have a positive *effect* on financial performance.	Supported
H5	Employee outcomes will have a positive *effect* on non-financial performance.	Supported
H6	The positive relationship between leadership and employees will be stronger under a low level of bureaucratic culture compared to a high level.	Supported
H7	The positive relationship between leadership and employees will be stronger under a high level of innovative culture compared to a low level.	Not supported
H8	The positive relationship between leadership and employees will be stronger under a high level of supportive culture compared to a low level.	Supported

The moderating influence of bureaucratic culture on the relationship between leadership and employee outcomes is depicted in Figure 2. As shown, the slope representing low bureaucratic culture is noticeably steeper positive slop, whereas the slope for high bureaucratic culture appears relatively flat. This suggests that a less bureaucratic environment amplifies the positive impact of leadership on employee outcomes. In essence, when bureaucratic constraints are reduced, leadership exerts a stronger and more meaningful effect on employees, thereby confirming the moderating role of bureaucratic culture.

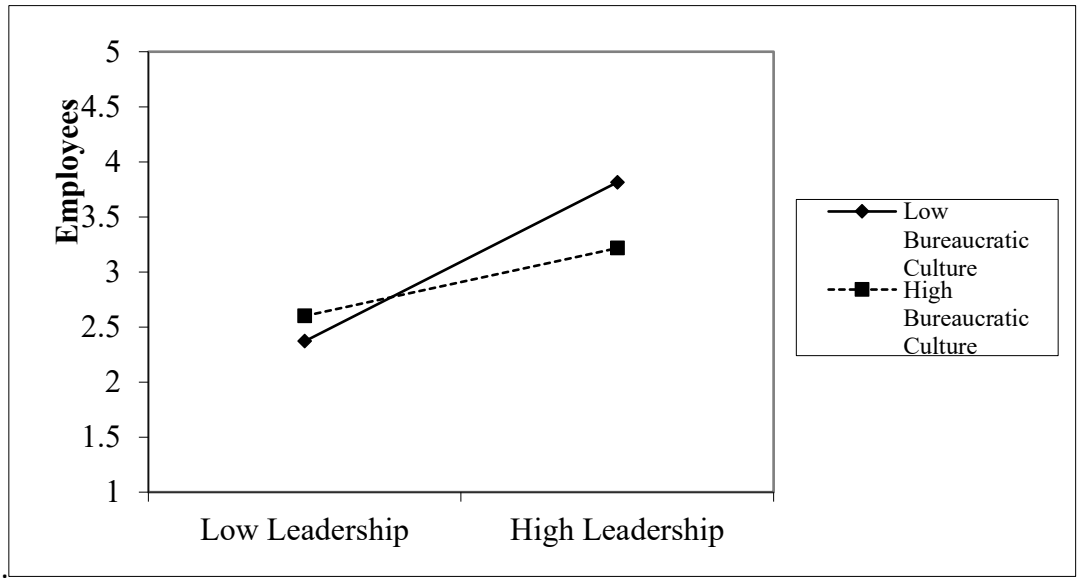

Figure 2: The Moderating Effect, Bureaucratic Culture x Leadership on Employees

Figure 3 depicts the moderating influence of supportive culture on the relationship between leadership and employee outcomes. As illustrated, the slope corresponding to high

supportive culture is noticeably steeper positive slope, while the line representing low supportive culture remains relatively flat. This pattern indicates that when supportive culture is strong, the positive relationship between leadership and employee outcomes becomes more pronounced. In other words, greater levels of supportive culture amplify the beneficial effects of leadership on employees, thereby confirming its significant moderating role.

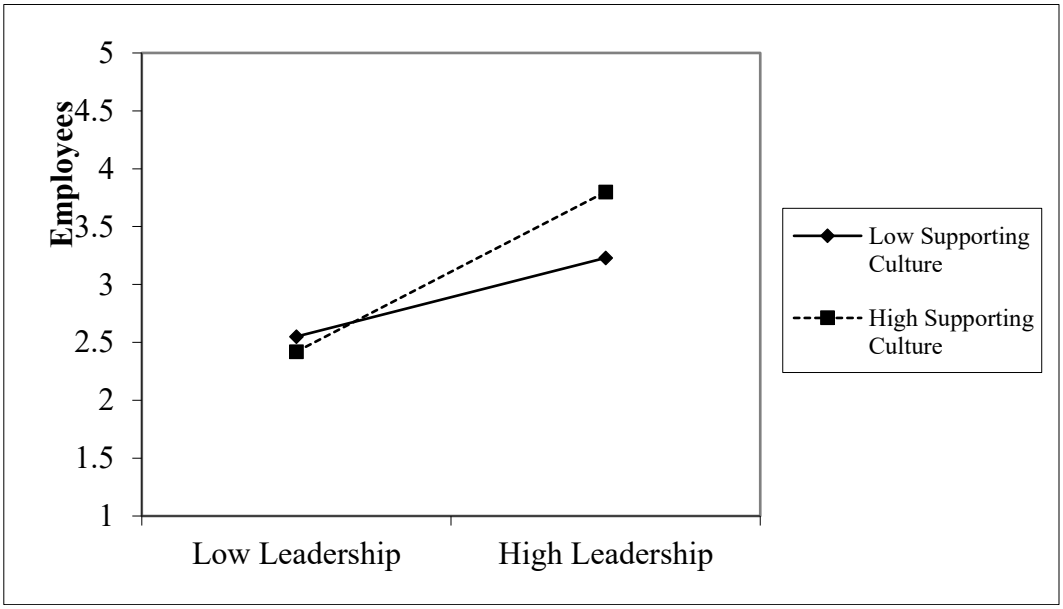

Figure 3: The Moderating Effect, Supporting Culture x Leadership on Employees

Discussion

The results of this study confirmed that leadership exerts a positive influence on employee outcomes (H1). This finding is consistent with Cherrafi et al. (2025), who emphasized leadership as a key enabler of employee participation and empowerment. Leaders who communicate clear goals, model desired behaviors, and encourage feedback are more likely to foster trust, motivation, and engagement among employees. Similarly, Fok-Yew and Hamid (2021) reported that leadership positively influences employee outcomes in Malaysian manufacturing firms. One possible explanation is that strong leadership and managerial commitment help to drive cultural transformation, cultivate positive employee attitudes, and strengthen work ethics (Joshi et al., 2023). Hence, leadership within Malaysia's E&E manufacturing sector remains a vital determinant of employee-related outcomes.

However, leadership did not have a significant positive effect on either financial or nonfinancial performance (H2 and H3). This result is consistent with studies by Sadikoglu and Olcay (2014) and Adem and Virdi (2020), which also reported that leadership has an insignificant direct impact on both financial and nonfinancial outcomes. Similarly, Masrom et al. (2017) concluded that leadership does not have a significant positive relationship with operational performance in manufacturing companies. These results indicate that the performance of E&E manufacturing companies is likely influenced by a range of factors beyond leadership alone. For instance, leaders cannot deliver results in isolation. Instead, they must drive and coordinate various internal components such as employee competencies, organisational culture, operational efficiency, and technological capabilities to achieve strong financial and nonfinancial performance.

The results also revealed that employee outcomes significantly influence both financial and non-financial performance (H4 and H5). This finding reinforces the strategic importance of human capital in Malaysia's E&E sector, which employs approximately 590,000 workers, representing about 3% of the national workforce (MIDA, 2024). Employees in this sector play critical roles in production, quality assurance, customer engagement, and innovation areas that directly impact cost efficiency, product quality, and customer satisfaction. The findings of the present study are consistent with Alda (2021), who confirmed that the workforce significantly contributes to improved performance in Indonesia's palm oil industry. Similarly, Peng and Prybutok (2015) reported that employees have a positive impact on financial outcomes in both public and private organisations in China. Overall, these findings highlight employees as strategic assets, not merely operational resources, who drive both short-term financial outcomes and long-term organisational sustainability.

In the moderation analysis, both bureaucratic culture (H6) and supportive culture (H8) were discovered to significantly moderate the interaction between leadership and employee outcomes. Notably, a low level of bureaucratic culture exhibited a positive moderating effect, whereas a high level of supportive culture also demonstrated positive moderation. The finding regarding low level of bureaucratic culture suggests that employees in the E&E sector may be less responsive to rigid hierarchical structures and formalized reporting systems. Instead, they appear to favor organisational environments that promote flexibility, autonomy, and reduced emphasis on authority and control. This observation is consistent with Erkutlu (2012), who found that high levels of bureaucracy can diminish the effectiveness of leadership by creating distance between leaders and subordinates.

The moderating influence of supportive culture on the relationship between leadership and employee outcomes aligns with the findings of Thumbi, Hannah and Rosemarie (2020), who examined how organisational culture shapes the relationship between top management and employee performance across 75 hospitality firms in Kenya. Their study demonstrated that a strong supportive culture enhances this connection. Likewise, Al-Sada et al. (2016) observed that organisational culture moderates the impact of leadership style on employee satisfaction within Qatar's education sector. Collectively, these studies suggest that a supportive organisational culture amplifies the positive effects of leadership by promoting an encouraging and engaging workplace environment, which in turn improves employee engagement and performance.

In contrast, this study found that innovative culture did not moderate the relationship between leadership and employee outcomes (H8) within Malaysia's E&E sector. This outcome corresponds with the findings of Mubarak et al. (2021), who noted that although innovation is vital for sustaining long-term organisational success, it may not exert a direct influence on day-to-day leader–employee interactions. One plausible explanation is that innovation, while strategic in nature, may not immediately shape the operational dynamics between leaders and their teams. Mete (2017) further contended that innovative work behaviour largely depends on whether the internal environment established by management effectively motivates employees to innovate.

Theoretical Contributions

This study makes several significant contributions to theoretical literature.

First, it introduces and empirically validates a comprehensive conceptual framework within Malaysia's E&E sector, a vital industrial domain in an emerging economy. By establishing the relationships between leadership, employee outcomes, organisational culture, and both financial and non-financial performance, the study extends existing theories of leadership effectiveness and organisational performance. The validated framework provides a foundation for future research exploring the mechanisms through which leadership influences performance in dynamic, technology-intensive industries.

Second, the study advances the understanding of organisational culture by examining three distinct cultural dimensions including bureaucratic, supportive, and innovative—rather than treating culture as a single, unified construct. This multidimensional approach provides deeper theoretical insight into how specific cultural contexts shape the strength and direction of the leadership–employee relationship. Consequently, it enables scholars to identify more precisely which cultural attributes facilitate or constrain leadership effectiveness within organisational settings.

Third, the findings lend empirical support to Stakeholder Theory (Fonseca, 2021) by demonstrating that organisational success is determined by a balance of financial and non-financial outcomes influenced by multiple stakeholder groups. The results show that leadership, employee well-being, and customer satisfaction collectively contribute to sustainable organisational performance, underscoring the interdependence among internal and external stakeholders. This reinforces the theoretical argument that performance should be conceptualized beyond purely financial terms to reflect broader stakeholder value.

Finally, the study contributes to the growing body of research advocating for a holistic performance perspective. By integrating financial and non-financial performance dimensions, it highlights the importance of balanced measurement systems that capture both tangible and intangible drivers of success. This integration provides a reference point for future researchers to adopt more inclusive performance frameworks across diverse industrial and national contexts.

Managerial Implications

The present study offers several practical implications for managers in the E&E sector, as well as for policymakers seeking to enhance organisational performance and sustainability.

First, by identifying the variables that significantly influence both financial and non-financial outcomes, the study provides managers with actionable insights for effective resource allocation. In resource-constrained manufacturing environments, understanding which factors generate the greatest impact allows managers and operations leaders to prioritize initiatives that strengthen both short-term performance and long-term sustainability. In addition, as ESG practices gain prominence, managers should note that some firms may struggle with sustainability reporting due to limited expertise and added measurement costs, which can be eased through phased adoption and focused training.

Second, the study's findings on three distinct dimensions of organisational culture including bureaucratic, supportive, and innovative offer practical guidance for achieving cultural

alignment. Specifically, a high level of supportive culture enhances employee outcomes, while a lower level of bureaucratic culture similarly strengthens the positive effects of leader-employee relationships. This highlights the importance of cultivating an environment that promotes trust, collaboration, and autonomy rather than rigid hierarchies. In the context of the E&E sector, where operational agility and employee engagement are critical, managers should focus on empowering employees, streamlining communication, and encouraging cross-functional cooperation to foster stronger leader–employee relationships and improved performance.

Finally, policymakers and industry leaders should recognize that sustainable organisational performance extends beyond technological and capital investments. The study underscores the strategic importance of organisational culture as a complementary lever for national industrial competitiveness. Government agencies, such as the Malaysian Investment Development Authority (MIDA) and the Ministry of Investment, Trade and Industry (MITI)), can support this effort by promoting leadership and cultural development programs that strengthen collaboration and innovation within the E&E ecosystem. By embedding supportive cultural practices within industry guidelines, policymakers can help ensure that leadership development translates into measurable performance improvements across the sector.

Conclusion

This study contributes to the organisational management literature by addressing two major gaps: the underrepresentation of non-financial performance measures in assessing sustainable organisational performance, and the limited examination of distinct cultural dimensions as moderating variables. Using empirical evidence from Malaysia's E&E manufacturing sector, the findings reveal that leadership alone does not significantly influence either financial or non-financial outcomes. This indicates that effective leadership must be complemented by strong employee engagement and supportive internal mechanisms to drive overall performance.

Conversely, employee outcomes demonstrate a significant positive effect on both financial and non-financial performance, underscoring the strategic role of employees as key contributors to organisational sustainability. The moderating analysis further shows that a supportive organisational culture strengthens the relationship between leadership and employee outcomes, while a low level of bureaucratic culture enhances leader–employee synergy by promoting autonomy and flexibility. These findings highlight that cultivating a people-oriented and adaptive culture is essential for maximizing leadership effectiveness and improving performance in dynamic manufacturing environments.

Overall, this study offers valuable insights for both practitioners and scholars. It advances theoretical understanding by integrating leadership, employee outcomes, and multi-dimensional organisational culture within a single empirical framework, while also providing practical guidance for managers aiming to align cultural values with performance objectives.

Limitation and Recommendation

Although this study offers meaningful insights, several limitations should be acknowledged. First, the use of a cross-sectional research design where data were gathered at a single point in time, restricts the ability to infer causality or capture evolving dynamics between

leadership, employee outcomes, and sustainable performance. Future research would benefit from adopting a longitudinal design, which allows patterns and changes in leadership behaviour, employee responses, and organisational performance to be tracked over time (Podsakoff, MacKenzie, & Podsakoff, 2012). A longitudinal approach could provide a richer understanding of how shifts in leadership and organisational culture interact to shape long-term sustainability outcomes.

Second, the study focuses exclusively on Malaysia's E&E manufacturing sector. While this industry represents a major pillar of the national economy, the findings may not be directly generalizable to other sectors or contexts. Future research should therefore extend the framework to other manufacturing sub-sectors or service-oriented industries that increasingly emphasize sustainability and digital transformation (Yang & Jin, 2024). Comparative cross-country or cross-sectoral studies may further uncover contextual differences in how leadership and culture interact to shape performance outcomes.

Third, this study primarily examines human factors, specifically leadership and employees as drivers of financial and non-financial performance. Future research could broaden this scope by integrating technological, structural, and environmental dimensions, such as digital infrastructure, green innovation, and Industry 4.0 initiatives (Ghobakhloo et al., 2021; Ma et al., 2023). Incorporating these factors would offer a more holistic understanding of sustainable organisational performance in technologically advancing environments.

Finally, the study faced a relatively modest response rate, a common challenge in organisational-level surveys in Malaysia due to confidentiality concerns and management availability (Abdul Razak et al., 2023). To mitigate this limitation, future researchers could adopt mixed-method designs that combine quantitative surveys with qualitative interviews or focus groups involving key decision-makers. This would enable richer contextual interpretation and strengthen the robustness of findings.

By tackling these limitations, future studies can further strengthen theoretical contributions and practical implications concerning how leadership, organisational culture, and employee dynamics in promoting sustainable performance, particularly within rapidly evolving industrial environments.

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