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THE EFFECT OF TRANSFORMATIONAL LEADERSHIP ON SUSTAINABILITY PERFORMANCE OF MANUFACTURING FIRMS IN KENYA

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ABSTRACT: *This study examined the influence of specific dimensions of transformational leadership on the sustainability performance of manufacturing firms in Kenya. The research was hinged on the Stakeholder theory and the Resource-Based View (RBV). A cross-sectional design was employed, with data collected from 351 managers via an online survey. Hierarchical multiple regression analysis revealed that inspirational motivation ($b = 0.15$, $t = 3.76$, $p < .001$), intellectual stimulation ($b = 0.09$, $t = 2.05$, $p = .041$) and individualized consideration ($b = 0.18$, $t = 5.82$, $p < .001$) had significant positive effects on sustainability performance. In contrast, idealized influence ($b = -0.02$, $t = -0.53$, $p = .594$) showed no significant effect. These findings underscore the importance of transformational leadership in advancing sustainability within the manufacturing sector and suggest that targeted leadership development may enhance organizational outcomes.*

KEYWORDS: Sustainability performance; Transformational leadership; Intellectual stimulation; Idealized influence; Individualized consideration; Inspirational motivation; Manufacturing firms.

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INTRODUCTION

Globally, the need for the incorporation of sustainability performance into fundamental business operations has grown greatly in recent decades (Elkington, 1998; United Nations, 2015). This has been driven by increasing regulatory pressures, customer demands, investor expectations, social inequality, and climate change. Embracing sustainability also offers a variety of strategic advantages, including enhanced competitive positioning, reduced operational costs, improved brand reputation, and strengthened stakeholder relations (Orlitzky, Schmidt & Rynes, 2003; Porter & Kramer, 2006; Hart, 1995).

The manufacturing sector, a significant engine of economic development and employment, faces the challenge of environmental degradation and social responsibility due to its resource-intensive nature and waste generation (Mwangi, 2018). Hence, the sector is compelled to move beyond profitability and also consider its social, ecological, and economic impacts. This necessitates a major shift towards sustainable practices (Elkington, 1997; Schaltegger *et al*., 2016).

Recent reports have highlighted that firms in the developing economies face greater challenges at improving their sustainability performance compared to their counterparts in the developed nations due to financial and technological limitations (World Bank, 2024; UN, 2024; Okereke & Frynas, 2018). This underscores the urgency for the firms in these regions to adopt new strategies for sustainability. Transformational leadership is recognized for its ability to improve sustainability by inspiring vision, fostering innovation and facilitating organizational change (Bass, 1985; Bass & Avolio, 1994; Tuwei *et al.,* 2023).

This notwithstanding, research on transformational leadership and sustainability performance is scarce, especially on the African continent, as highlighted in a recent systematic review (Kimani *et al.,* 2025). In addition, there is no clear understanding of the dimensions of these leadership styles that are most effective in inspiring sustainability goals within the specific context of the Kenyan manufacturing sector. This highlights a critical gap, which this study sought to fill.

Statement of the Problem

The Kenyan manufacturing sector, while significantly contributing to GDP and employment, faces great challenges in implementing sustainable practices, like other developing economies (World Bank, 2024; United Nations, 2024; Okereke & Frynas, 2018). For example, this sector accounts for approximately 7.8% of Kenya's GDP and creates up to 100,000 new jobs annually (KNBS, 2022; KAM, 2023; Cowling, 2023). However, this sector struggles with inefficient use of resources, poor waste management, reliance on nonrenewable energy, and gaps in employee and community welfare (KNBS, 2023; Tuwei *et al.,* 2023). Transformational leadership has emerged as a promising avenue for sustainability performance. However, there is scarcity and fragmentation of literature on transformational leadership, especially within the African context. In addition, research that specifically examines how the individual dimensions of transformational leadership directly impact sustainability performance within the manufacturing sector is scarce (Rono *et al.,* 2020). Many previous studies in Kenya focused on the general effect of leadership on financial or operational performance, while others have the moderating effect or the mediating effects of transformational leadership. This creates a gap. This study sought to fill this gap by providing a granular understanding of the relationship

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between transformational leadership and sustainability performance within the Kenyan manufacturing sector.

Study Objectives

The primary aim of this research was to examine the influence of different dimensions of transformational leadership on the sustainability performance of selected manufacturing firms in Kenya. The specific objectives were to:

- determine the effect of idealized influence on sustainability performance;
- establish the effect of inspirational motivation on sustainability performance;
- evaluate the effect of intellectual stimulation on sustainability performance; and to
- establish the influence of individualized consideration on sustainability performance.

Research Hypotheses

The null hypotheses were framed using the above objectives, as follows:

- H_{01}: Idealized influence has no significant effect on sustainability performance.
- H_{02}: Inspirational motivation has no significant effect on sustainability performance.
- H_{03}: Intellectual stimulation has no significant effect on sustainability performance.
- H_{04}: Individualized consideration has no significant effect on sustainability performance.

Significance of the Study

This study provides several significant contributions to the understanding of leadership and sustainability, particularly within the context of Kenya's manufacturing sector. For the manufacturing firms, the study offers empirical evidence that promoting specific transformational leadership dimensions can directly enhance sustainability performance. This provides a clear path for organizations aiming to improve their sustainability outcomes.

Empirically, the study addresses an important geographical and sectoral research gap in Kenya by offering a granular analysis of the dimensions of transformational leadership. This contributes to literature by expanding on the link between leadership and sustainability performance in the context of developing economies.

For policymakers, the study provides valuable insights that can inform the development of targeted strategies and supportive structures to encourage sustainable manufacturing practices, recognizing the fundamental role that leadership plays.

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Scope of the Study

Geographically, the study focused on manufacturing firms operating within Nairobi County, Kenya and registered with the Kenya Association of Manufacturers (KAM). Conceptually the study targeted the specific impacts of the four components of transformational leadership—intellectual stimulation, idealized influence, individualized consideration, and inspirational motivation—on key sustainability performance indicators. The study also controlled for relevant firm-level characteristics: firm sector, firm size, firm age, and ISO 14001 certification.

LITERATURE/THEORETICAL UNDERPINNING

Conceptual Definitions

Sustainability Performance—Triple Bottom Line (TBL)

The Triple Bottom Line (TBL) concept, developed by Elkington (1997), theorizes that firms must recognize and report not only on their financial performance but also include the social and environmental impacts. This approach integrates three dimensions:

(i). **Economic Performance**: This goes beyond traditional financial profits to include aspects like economic contribution to the community, job creation, and fair wages

(ii). **Social Performance**: This encompasses factors such as employee well-being, community engagement, ethical labor practices, and human rights (Epstein, 2008).

(iii). **Environmental Performance**: This dimension focuses on minimizing ecological footprint, resource efficiency, waste reduction, and pollution prevention (Epstein, 2008).

Recent literature highlights the TBL framework's utility as a catalyst for fostering innovation and achieving long-term sustainability performance by addressing socio-environmental challenges (Samo, 2025). Further, the TBL has evolved from a theoretical model to an actionable sustainability framework, shifting towards specialized areas like circular economy and climate impact. While the TBL concept is widely adopted, its measurement remains a subject of ongoing debates, with authors like Hahn and Scheel (2019) providing a critical review of various approaches and assessing these three dimensions. In developing economies like Kenya, achieving sustainability performance presents unique challenges, often exacerbated by resource constraints, technological limitations, and fluctuating policy environments (World Bank, 2024; United Nations, 2024).

Transformational Leadership

Transformational leadership is a style whereby the leaders inspire and motivate their followers to achieve collective extraordinary organizational outcomes, frequently transcending their own self-interests for the good of the organization (Bass & Avolio, 1994; Bass & Avolio, 1995). This leadership style is characterized by four key dimensions, often referred to as the Four I's, as follows:

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(i). **Idealized Influence**: Leaders act as role models, gaining the respect and trust of their employees.

(ii). **Inspirational Motivation**: Leaders communicate a persuasive vision for the future, inspiring optimism and a common purpose.

(iii). **Intellectual Stimulation**: Leaders encourage creativity, innovation, and critical thinking in order to challenge the status quo, without fear of failure, for long-term initiatives.

(iv). **Individualized Consideration**: Leaders pay attention to the unique needs and requirements of each employee, promoting personal growth and development.

Theoretical Framework

This research was hinged on the **Stakeholder Theory** (Freeman, 1984). This theory argues that an organization's lasting success is determined by its capability to create value for every stakeholder, not just shareholders. Sustainability inherently involves harmonization of the interests of diverse stakeholders (Freeman, 1984). Transformational leaders, through their emphasis on principal organizational objectives and ethical obligations, are particularly armed to navigate complex stakeholder concerns and incorporate them into the business strategies and practices. This strengthens organizational sustainability**.**

The **Resource-Based View (RBV)** was the subsidiary theory. This theory posits that a firm's internal resources and capabilities are the primary drivers of its sustainable competitive advantage and performance (Barney, 1991; Wernerfelt, B. (1984). An organization with unique, rare, inimitable, valuable, and non-substitutable (VRIN) resources and capabilities gains continuous competitive advantage over its competitors. Current literature reinforces this by emphasizing that intangible resources, such as leadership style, are even more critical than tangible assets for creating sustainable competitive advantage (Hossain, 2024; Hermelingmeier & Wirth, 2021). Transformational leadership, especially the individual dimensions, represents specific capabilities that can be viewed as intangible resources that add to a firm's sustainability performance.

Empirical Literature

Transformational Leadership Dimension and Sustainability Performance

Transformational leaders are well-suited to enhance sustainability performance. They do this by managing the complex stakeholder relationships and integrating their concerns into business practices. For example, a transformational leader can use inspirational motivation to rally employees around a green initiative or use intellectual stimulation to encourage innovative, eco-friendly production processes.

While research specifically on Kenyan manufacturing is limited, research in leadership and sustainable performance in the region often highlights the positive impact of such visionary leadership styles (Tuwei *et al.,* 2023). This study aimed to disaggregate each of the transformational leadership dimensions in order to provide a better understanding of their specific contributions to sustainability performance in the Kenyan context. The links are highlighted below:

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Idealized Influence and Sustainability

Leaders with idealized influence act as ethical role models and demonstrate integrity and commitment to organizational values. Their credible and trustworthy behavior can inspire followers to adopt similar environmentally and socially responsible behaviors (Robertson & Barling, 2013). When employees observe that their leaders are sincerely dedicated to sustainability initiatives, they are more likely to adopt and defend the initiatives.

Inspirational Motivation and Sustainability

This dimension is crucial for translating abstract sustainability goals into meaningful and attainable objectives for employees, promoting a collective commitment to environmental and social stewardship. Transformational leaders can stimulate employees to internalize sustainability goals and work towards them with enthusiasm and dedication by expressing a convincing and optimistic vision of a sustainable future for the organization (Joo *et al.,* 2017).

Intellectual Stimulation and Sustainability

Leaders who provide intellectual stimulation encourage employees to question the status quo, think creatively, and develop new, greener, and more socially responsible approaches. This fosters the values of nonstop learning and development crucial for navigating sustainability transitions (Dartey-Baah & Ampofo, 2016).

Individualized Consideration and Sustainability

Transformational leaders can help employees to develop the skills and confidence necessary for effective contribution to sustainability initiatives. Empowering individuals to take ownership of environmental and social responsibilities within their roles can lead to innovative grassroots efforts and increased employee engagement in sustainable practices (Zabid & Awang, 2019). This personalized attention builds capacity and fosters a sense of personal responsibility towards sustainability.

Conceptual Framework

The dimensions of transformational leadership (intellectual stimulation, idealized influence, individualized consideration, and inspirational motivation) are hypothesized as crucial for driving sustainability initiatives. For instance, a transformational leader can use inspirational motivation to rally employees around sustainability performance. The interrelationship between these dimensions and the TBL framework is highlighted in the conceptual framework below.

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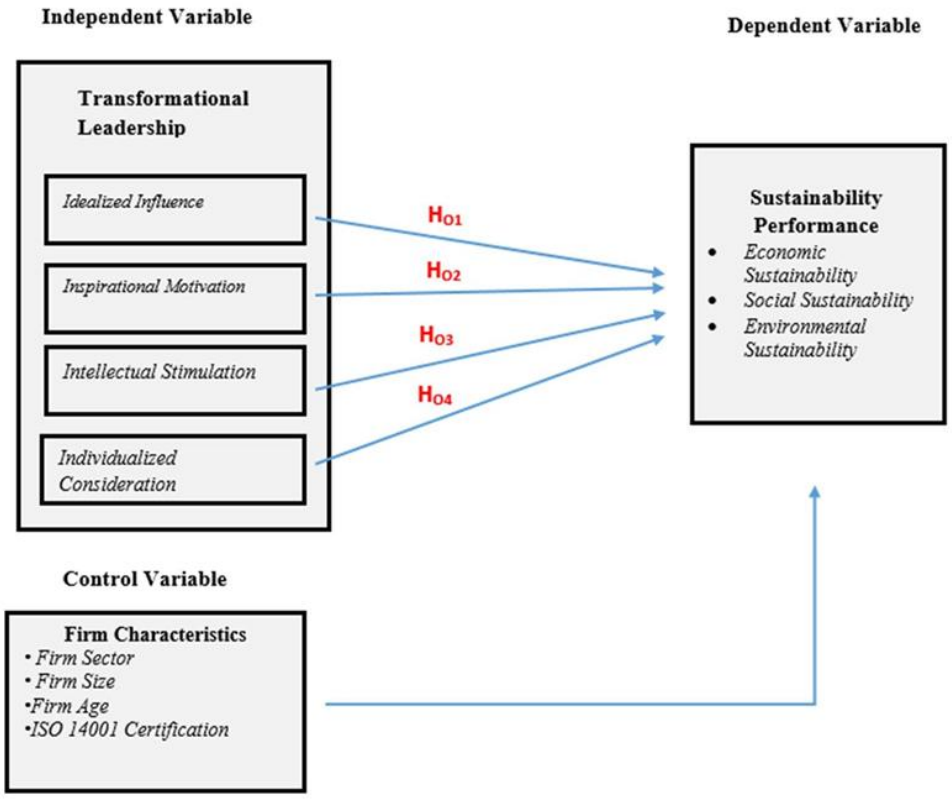

Figure 1: Conceptual Model

Source: *Researcher (2024)*

METHODOLOGY

Research Philosophy

The research was pegged on positivist research philosophy. This philosophy emphasizes the use of observable and quantifiable data to examine hypotheses for causal relations. A quantitative method was used to scrutinize the connection between leadership dimensions and sustainability performance.

Research Design

The survey design used for this study was cross-sectional. This methodology was selected because it enabled the researchers to conveniently collect big samples of data at a single point in time (Hair *et al*., 2010).

Study Location

The study was undertaken in Nairobi County, Kenya. This location was chosen due to Nairobi's high concentration of manufacturing firms, since approximately 80% of Kenya's manufacturing firms are located there (KAM, 2023). The county was, therefore, deemed representative of the sector, providing a suitable and concentrated sample for this research.

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Target Population

The target population for the study included all 1,072 manufacturing firms registered with the Kenya Association of Manufacturers (KAM) in Nairobi County as of 2017/2018. This was an inclusion-exclusion criterion to restrict participation to firms with a minimum operational history of five years.

Sample Size Determination

A sample size of 407 participants was calculated using Yamane's (1967) formula and rule of thumb. The sampling design was a combination of stratified and systematic sampling. The population was first stratified by sector to ensure adequate representation of each industry. Subsequently, a systematic sampling procedure was utilized within each stratum to select the 407 managers of the participating firms for the study.

Measurement of Variables

Items were measured on a 5-point Likert scale through a structured questionnaire. Transformational leadership dimensions were evaluated using the Multifactor Leadership Questionnaire (MLQ-5X) developed by Bass and Avolio (1995). Sample items included "Our employees are proud to be associated with our leaders," "Our leaders use symbols & images to help employees focus on their work," and "Our leaders provide employees with new ways of looking at things."

Sustainability performance was assessed through adapted measurement scales derived from Epstein (2008), Lwanga *et al*. (2023) and Mwangi (2018), including social, economic and environmental indicators. Sample items included "Our firm has been more profitable than our competitors," "Our firm has regularly funded & participated in local CSR activities," and "Our firm has undertaken regular voluntary measures to restore the environment." Control variables comprised firm age, firm size, firm sector and ISO 14001 certification status. Items on the scales included "Which is your firm's Sector? ", "What is the current number of permanent employees in the firm?", "How long has the firm been in existence?" and "Is the firm ISO 14001 Certified?". Control variables were included to measure the extent to which they impacted the results of the study. For example, Burawat, (2019) found that Firms with over five years' existence have a stronger link between Transformational Leadership and sustainability performance, while Awino (2025), found that ISO standards play a pivotal role in guiding companies on their sustainability journey

Pilot Study

A pilot study was conducted involving 43 manufacturing firms located in Mavoko Constituency, Machakos County. This was to appraise the reliability of the research instrument. Results from the pilot were used to enhance the questionnaire prior to the main data collection. The results of the pilot level were not included the main study in order preserve the integrity

Validity and Reliability

Content validity was established through expert review and alignment with contemporary academic literature. Construct validity was confirmed via both exploratory and confirmatory factor analyses. The internal consistency of the instrument was assessed using Cronbach's Alpha (2004), ensuring the reliability of the measurement scales.

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Procedure for Data Collection

Primary data was collected through a five-stage approach using an online survey platform. In stage one, the research instruments were validated by experts. This was followed by training of the research assistants and obtaining the necessary ethical and regulatory clearances. Subsequently, a pilot study was conducted to ensure the reliability and validity of the research tools. Finally, the main data collection was conducted between 23rd September and 23rd October, 2024.

Data Analysis

The collected data was examined through SPSS software (Version 26.0) and summarized through descriptive statistics and tables. Hierarchical multiple regression was used to assess the contribution of leadership dimensions to sustainability performance, controlling for firm-level variables. The method was selected in order to define the unique contribution of each independent variable by entering them into the model in a specific order. Diagnostic checks were conducted to test whether the collected data conformed to the linear regression assumption. These assumptions included linearity, normality, homoscedasticity, independence of errors and non-multicollinearity (Hair *et al*., 2010). Significance was set at $p \leq .05$.

Ethical Considerations

Informed consent was obtained from participants before commencement of the study. Also, the participants were made aware of the reason for the study and the voluntary nature of their participation. In addition, ethical approval was granted by Moi University's School of Business and a research permit was obtained from the National Commission of Science and Technology Institute (NACOSTI) for the study. Still more, data was treated with utmost confidentiality.

RESULTS/FINDINGS

Response Rate

A total of 351 managers participated in the study from a target sample of 407, resulting in a response rate of 86.2%, as presented in Table 1 below. This response rate was deemed sufficient for robust statistical analysis as per the study of Lindner and Wingenbach (2001), who recommend a response rate of at least 50% for surveys.

Descriptive Statistics of Main Study Variables

Table 1 below highlights the descriptive statistics of the outcomes of the main study variables. These were surveyed through a 5-point Likert scale. The results reveal that both Kurtosis and Skewness values fell inside acceptable ranges for normality, generally between -2 and +2. Hence, there were no severe deviations from normal distribution.

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Table 1: Descriptive Statistics for Study Variables (N = 351)

Variable	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
Idealized Influence	1.67	5	3.753	0.67	-0.272	-0.245
Inspirational Motivation	2	5	3.809	0.606	-0.408	-0.23
Intellectual Stimulation	2	5	3.68	0.591	-0.127	0.042
Individualized Consideration	1.25	5	3.741	0.749	-0.425	0.126
Transformational Leadership	2.58	4.94	3.746	0.404	-0.017	0.010
Economic Sustainability	1	5	4.028	0.674	-0.767	0.595
Social Sustainability	1.57	5	3.766	0.819	-0.333	-0.401
Environmental Sustainability	1.25	5	3.816	0.829	-0.575	0.042
Sustainability Performance	2.54	5	3.87	0.468	-0.009	-0.056

Source: *Research Data (2024)*

Descriptive Statistics for Control Variables

Table 2 presents the frequency distributions for the control variables: firm size, firm sector, firm age and ISO certification status. The Chemical and pharmaceutical sector had the highest representation (34.8%), followed by Mining, Construction, Plastic and Rubber (22.5%), and Textile, Apparel and Leather (16.2%). The Service and Consultancy sector had the lowest representation (3.4%). Regarding firm size, the majority of firms (36.5%) had below 50 employees, while 18.5% had 50–100 employees, and 12.0% had above 200 employees. In terms of firm age, the largest group (30.8%) fell within the 11–15 years' category, followed by firms below 10 years (26.5%) and those above 20 years (20.5%). For ISO certification, 55.6% of firms reported having certification, while 44.4% did not.

Table 2: Descriptive Statistics and Frequencies for Control Variables (N = 351)

Factor	Category	Frequency	Percentage
Firm Sector	Service & Consultancy	12	3.4%
	Mining, Construction, Plastics & Rubber	79	22.5%
	Chemicals, Pharmaceuticals, Medical Equipment, Motor Vehicles, Metal & Electronics	122	34.8%
	Food & Fresh Produce	55	15.7%
	Textile, Apparel & Leather	57	16.2%

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Factor	Category	Frequency	Percentage
	Timber, Wood & Paper	26	7.4%
	Total	**351**	**100.00%**
Size	Below 50 Employees	128	36.5%
	50-100 Employees	65	18.5%
	101-150 Employees	54	15.4%
	151-200 Employees	62	17.7%
	Above 200 Employees	42	12.0%
	Total	**351**	**100.00%**
Age	Below 10 yrs	93	26.5%
	11-15 years	108	30.8%
	16-20 yrs	78	22.2%
	Above 20 yrs	72	20.5%
	Total	**351**	**100.00%**
ISO 14001 14001 Certification	Yes	195	55.6%
	No	156	44.4%
	Total	**351**	**100.00%**

Source: *Research Data (2024)*

Reliability Analysis

The reliability of the measurement scales was assessed through Cronbach's Alpha. The composite transformational leadership scale, encompassing the four dimensions of idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration, had a Cronbach's Alpha coefficient of 0.674. In the case of sustainability performance, the reliability test generated a Cronbach's Alpha of 0.646. These values were slightly below the ideal threshold of 0.7 (Nunnally & Bernstein, 1994). However, they were considered acceptable to demonstrate internal consistency as per the guidance of Pallant (2010), who recommends a value of at least 0.5.

Factor Analysis Results

Exploratory Factor Analysis (EFA)

(a). **EFA Results for Sustainability Performance:**

EFA extracted three components: Social (Soc), Environmental (Env), and Economic (Econ). These components collectively explained 57.5% of the total variance, with Social (24.2%), Environmental (18.81%), and Economic (14.5%) contributing greatly to the total variance. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was .730, which suggests good sampling adequacy. Bartlett's Test of Sphericity produced a Chi-Square value of 3224.020 with 120 degrees of freedom ($p < .001$), indicating that the correlation matrix was sufficiently large and appropriate for conducting factor analysis. The Rotated Component Matrix further confirmed that all items loaded clearly onto their intended constructs, supporting the

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hypothesized three-factor structure of sustainability performance, as highlighted in table 3 below.

Table 3: Rotated Component Matrix for Sustainability Performance

Code	Item Description	Component		
		Social (Soc.)	Environmental (Env.)	Economics (Econ.)
Soc.2	Our firm has provided equal opportunity for all without discrimination	.822		
Soc.7	Our firm has obeyed the provisions of Public Health Act	.816		
Soc.5	Our firm has engaged in fair labour practices	.791		
Soc.6	The social welfare scheme of our employees has greatly improved	.776		
Soc.1	Our firm has considered the interests of all stakeholders in investment decisions	.673		
Soc.8	Work-related accidents & illnesses in our firm has greatly reduced	.653		
Soc.3	Our firm has regularly funded & participated in local CSR activities	.451		
Env.2	Our firm has obeyed the environmental laws, e.g. NEMA laws		.938	
Env.4	Our firm has undertaken regular voluntary measures to restore the environment		.914	
Env.6	Our firm has a policy on environmental conservation		.906	
Env.3	Our firm has conducted periodic environmental impacts audits of its activities		.596	
Econ.4	Our firm has reduced the cost of inputs for similar level of output			.776
Econ.6	Our firm's overall financial performance has improved better than our competitors			.772
Econ.2	Our firm has increased its market share greater than our competitors			.647
Econ.3	Our firm's total sales have gradually improved			.605
Econ.1	Our firm has been more profitable than our competitors			.533
	Eigen Values	2.748	1.178	1.136
	% of Variance	24.2	18.8	14.5%
	Cumulative %	24.2%	43.2%	57.5%
	Analysis Rotation Method: Varimax with Kaiser Normalization. a. Based on Correlations			

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Code	Item Description	Component		
		Social (Soc.)	Environmental (Env.)	Economics (Econ.)
	Kaiser-Meyer-Olkin measure of sampling adequacy = 0.730 Bartlett's test for Sphericity: Approx. Chi-Square =3224.020; df =120; Sig<.=.001			

Note: Factor loadings for items are presented. Loadings below .40 are suppressed for clarity.

Source: *Research Data (2024)*

(b). EFA Results for Transformational Leadership

The EFA identified four distinct components of transformational leadership—individualized consideration (IC), intellectual stimulation (IS), idealized influence (II) and inspirational motivation (IM)—which collectively explained 47.573% of the total variance. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was .698, indicating an acceptable level of sampling adequacy. Bartlett's Test of Sphericity yielded a statistically significant Chi-Square value of 659.005 with 105 degrees of freedom ($p<.001$), confirming that the data was suitable for factor analysis. The Rotated Component Matrix further validated the distinct loading of items onto their respective factors, thereby reinforcing the proposed four-factor structure of Transformational Leadership, as highlighted in table 4 below:

Table 4: Rotated Component Matrix (for Transformational Leadership EFA)

Code	Item Description	Component			
		Intellectual Stimulation (IS)	Individualized Consideration (IC)	Inspirational Motivation (IM)	Idealized Influence (II)
IS 2	Our leaders are tolerant of seemingly extreme positions of employees	0.743			
IS 4	Our leaders enable employees to rethink ideas they had never questioned before	0.742			
IS 5	Our leaders challenge employees to always seek new ways of solving problems	0.668			
IS 1	Our leaders challenge employees to think about old problems in new	0.444			
IC 3	Our leaders assign projects to employees individually		0.784		

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Code	Item Description	Component			
		Intellectual Stimulation (IS)	**Individualized Consideration (IC)**	**Inspirational Motivation (IM)**	**Idealized Influence (II)**
IC 5	Our leaders give personal attention to employees who seem rejected		0.675		
IC4	Our leaders reach out to employees who seem less involved in the group		0.659		
IC2	Our leaders show interest in individual employees' well-being		0.523		
IM 5	Our leaders use symbols and images to help employees focus on their work			0.752	
IM4	Our leaders help employees feel to that their work is important			0.724	
IM 3	Our leaders provide attractive images about what we can do for our organization			0.688	
II 2	Our employees feel good and comfortable around our leaders				0.698
II 5	Our leaders act as role models & appeal to employees' hopes& dreams				0.627
II 4	Our employees regard our leaders as ethical and trustworthy				0.489
IM2	Our leaders express with a few simple words what we could and should do				0.463
	Eigen Values	2.74	1.78	1.42	1.20
	% of Variance	18.28%	11.84%	9.47%	7.98%
	Cumulative %	18.28%	30.12	39.59	47.57
	Analysis Rotation Method: Varimax with Kaiser Normalization. a. Based on Correlations				

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Code	Item Description	Component			
		Intellectual Stimulation (IS)	Individualized Consideration (IC)	Inspirational Motivation (IM)	Idealized Influence (II)
	Kaiser-Meyer-Olkin measure of sampling adequacy = .698 Bartlett's test for Sphericity: Approx. Chi-Square =659.005; df =105; Sig<.=.001				

Note: Factor loadings for items are presented. Loadings below .40 are suppressed for clarity.

Source: *Research Data (2024)*

Confirmatory Factor Analysis (CFA) Results

(a) CFA Results for Sustainability Performance:

The factor model showed a substantial development over the baseline model ($X^2 = 166.136$, df = 62, $p < .001$). Also, other fit indices highlighted in table 5 below also indicated a good fit. Additionally, all factor loadings were statistically significant ($p < .001$), indicating strong relationships between the observed indicators and their respective latent constructs (Economic, Social, and Environmental Sustainability).

Table 5: CFA Fit Indices for Sustainability Performance

Index	Value
Comparative Fit Index (CFI)	0.947
Tucker-Lewis Index (TLI)	0.934
Bentler-Bonett Non-normed Fit Index (NNFI)	0.934
Root mean square error of approximation (RMSEA)	0.069
Standardized root mean square residual (SRMR)	0.069
Goodness of fit index (GFI)	0.934

Source: *Research Data (2024)*

(b) CFA Results for Transformational Leadership

The factor model showed a substantial development over the baseline model ($X^2 = 122.939$, df = 84, $p = 0.004$). Also, the Fit indices highlighted in table 7 below also indicated a good fit. In addition, all the factor loadings were statistically significant (p ranging from .001 to p=0.037), indicating strong relationships between the observed indicators and their respective latent constructs, as highlighted in table 8 below:

Table 7: CFA Fit Indices for Transformational Leadership

Index	Value
Comparative Fit Index (CFI)	0.931
Tucker-Lewis Index (TLI)	0.914
Bentler-Bonett Non-normed Fit Index (NNFI)	0.914

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Index	Value
Root mean square error of approximation (RMSEA)	0.036
Standardized root mean square residual (SRMR)	0.049
Goodness of fit index (GFI)	0.957

Source: *Research Data (2024)*

Hierarchical Multiple Regression

A hierarchical multiple regression analysis was conducted to examine the predictive power of transformational leadership dimensions on sustainability performance, controlling for firm characteristics, using stepwise multiple regression models with five distinct models. The key finding was as follows:

Model 1, which was the baseline model and included ISO certification, firm age, and firm sector as predictors, was not statistically significant ($p=0.736$). The model accounted for less than 1% of the variance in sustainability performance, and none of the individual control variables were significant predictors of sustainability performance ($p>0.05$).

Model 2, adding Idealized Influence to the model, did not result in a statistically significant improvement, with the model's explanatory power increasing only marginally to 0.8% ($R^2=0.008$). Idealized Influence was therefore not a significant predictor in this model ($p=0.200$).

In Model 3, the introduction of Inspirational Motivation resulted in a statistically significant model ($p<0.001$). This addition explained a significant portion of the variance, with the model now accounting for 6.7% of the variance in sustainability performance ($R^2=0.067$). Therefore, Inspirational Motivation appeared as a very significant predictor ($p<0.001$).

In Model 4, the inclusion of Intellectual Stimulation further improved the model, with the change being statistically significant. ($p=0.022$). The total variance explained increased to 8.1% ($R^2=0.081$). In this model, both Inspirational Motivation ($p<0.001$) and Intellectual Stimulation ($p=0.022$) were identified as significant predictors.

Model 5, the final model, which included Individualized Consideration, was highly statistically significant ($p<0.001$). This final dimension significantly increased the model's explanatory power, which now accounts for 16.5% of the variance in sustainability performance ($R^2=0.165$). The final model identified Inspirational Motivation ($p<0.001$), Intellectual Stimulation, and Individualized Consideration ($p<0.001$) as significant predictors. Idealized Influence remained a non-significant predictor of sustainability performance ($p=0.583$). As a result, H_{O2}, H_{O3} and H_{O4} were rejected. However, H_{O1} failed to be rejected. These results are presented in Table 9 below:

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Table 9: Hierarchical Regression Analysis Predicting Sustainability Performance

Model	R	R^2	Adjusted R^2	Std. Error	Change statistics					
					R^2 Change	F Change	df1	df2	P (F Change)	Durbin-Watson
1	.060[a]	0.004	-0.005	0.469	0.004	0.424	3	347	0.74	
2	.092[b]	0.008	-0.003	0.468	0.005	1.650	1	346	0.20	
3	.258[c]	0.067	0.053	0.455	0.058	21.507	1	345	0.00	
4	.284[d]	0.081	0.065	0.452	0.014	5.285	1	344	0.02	
5	.406[e]	0.165	0.147	0.432	0.084	34.424	1	343	0.00	1.60

Source: *Research Data (2024)*

DISCUSSION

The study provides important insights into the role of specific transformational leadership behaviors in driving sustainability performance within the Kenyan manufacturing sector.

The key findings indicate that inspirational motivation, intellectual stimulation, and individualized consideration have a significant and positive effect on sustainability performance. This aligns with existing international literature (Joo *et al.*, 2017; Chen *et al.,* 2023; Zabid & Awang, 2019). This suggests that leaders who articulate a compelling vision, foster innovative problem-solving, and provide personalized support are effective in promoting pro-environmental and socially responsible behaviors. Locally, the results support the study by Ngaithe et *al. (2018),* who investigated the relationship between transformational leadership and organizational performance in selected Kenyan manufacturing firms. The research found that transformational leadership, particularly its components of inspirational motivation, intellectual stimulation, and individual consideration, significantly contributed to organizational performance. The findings suggest that these leadership traits may be particularly effective in the Kenyan context, where firms face significant economic and environmental pressures.

Contrary to global findings such as those by Robertson and Barling (2013), but consistent with local literature like Ngaithe et al. (2018), the study revealed that idealized influence did not significantly affect sustainability performance. This suggests that while a leader's integrity and values are important, they may not directly drive sustainability outcomes in the Kenyan context. An explanation could be that the impact of idealized influence is more long-term and subtle, which a cross-sectional study design may not capture, or alternatively that employees may already expect ethical conduct, making it a standard rather than a motivational factor.

Additionally, the study found that firm characteristics were not significant predictors of sustainability performance, a potentially unique outcome that may reflect widespread adoption of sustainability practices among Kenya Association of Manufacturers (KAM) members. In contrast, a study by Tuwei et al. (2023) on manufacturing firms in Nairobi County reported mixed results regarding firm age and size. While firm age had a significant effect on sustainability performance, firm size did not.

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IMPLICATIONS TO RESEARCH AND PRACTICE

The study's contributions to research, policy and practice, particularly within the context of developing economies, are highlighted below:

Implications for Research

- **Advancement of Empirical Knowledge:** By empirically examining the relationship between transformational leadership and sustainability performance in Kenya, this research addresses a notable gap in the literature, which has been mostly focused on the developed economies.
- **Disaggregation of Transformational Leadership Constructs:** The study provides a more nuanced understanding of transformational leadership by disaggregating it into its four distinct dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. This allows for a clearer analysis of how specific leadership dimensions impact sustainability performance.
- **Directions for Future Inquiry:** The research establishes a foundation for subsequent studies, suggesting avenues for future inquiry, for example, the inclusion of moderating and mediating variables or conducting longitudinal studies to assess the long-term impact of transformational leadership on triple bottom line performance.

Implications for Policy and Practice

The findings provide actionable insights for organizations to design targeted leadership training and development programs. Human resource professionals can use these insights to refine recruitment, selection, and performance evaluation processes, placing greater emphasis on identifying and nurturing leaders who exhibit the transformational traits most conducive to achieving sustainability objectives.

For policymakers in Kenya and other developing economies, the study offers empirical evidence to support the creation of policies that promote sustainable business practices. It also underscores the importance of integrating leadership development as a strategic component of national sustainability agendas. Furthermore, by clarifying the link between transformational leadership and the triple bottom line, the study enables organizations to better align their leadership strategies with stakeholder expectations.

CONCLUSION

This study examined how the four dimensions of transformational leadership—idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration—impact the sustainability performance of manufacturing firms in Kenya. By breaking down the leadership style, the research provided a detailed perspective on how specific behaviors influence a firm's economic, social and environmental results.

The key findings were that three of the four dimensions—inspirational motivation, intellectual stimulation, and individualized consideration—were found to have a significant and positive effect on sustainability performance. This shows that these specific leadership behaviors are

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crucial for building a culture of sustainability. Idealized influence, however, was found not to have a significant effect on sustainability performance, suggesting the need for further investigation.

LIMITATIONS AND FUTURE RESEARCH

The cross-sectional nature of this study limits the ability to infer causal relationships between the dimensions of transformational leadership and sustainability performance. Future research could address this by adopting a longitudinal design, tracking firms' performance over time. Additionally, future researchers could consider qualitative studies or mixed research for deeper understanding. Also, future research could consider exploring potential moderating and mediating variables that may affect the relationship between leadership and sustainability. Finally, future research could focus on other sectors or regions of Kenya. This could help determine the generalizability of these findings.

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