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Greening the Mining Industry: Influencing Environmental Performance Through Green Organisational Culture—The Mediating Effect of Green Employee Behaviours

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Abstract

The rapid and accelerating depletion of natural resources has spurred governments and pressure groups to call for effective environmental management initiatives. One such initiative is the creation of a green organisational culture to combat environmental degradation. As a result, there has been a burgeoning of literature on the concept of green organisational culture; however, the research is still in its nascent stage. For this reason, this study investigated the mediating role of green employee behaviours on the relationship between green organisational culture and environmental performance in the mining industry. Data was systematically collected from 277 participants and analysed using SMARTPLS 4. The results revealed that, while green organisational culture significantly impacted environmental performance, green employee behaviours partially mediated this relationship. These results offer important insights for mine managers.

Keywords: green organisational culture; green employee behaviours; environmental performance

1. Introduction

Mining companies play a vital role in the global economy, providing employment and materials for infrastructure development (PwC Global Mine, 2024). With global revenues exceeding $700 billion in 2022 (www.statista.com, accessed September 9, 2024), the mining industry contributes significantly to the growth of many economies worldwide. However, mining also causes severe environmental degradation. Its detrimental effects include water contamination, air pollution, land degradation, and damage to biodiversity (Worlanyo & Jiangfeng, 2021). Consequently, protecting the environment has become a priority for many corporations and governments worldwide. In fact, the United Nations Sustainable Development Goal 13 clearly emphasises the need to combat climate change and its impact. The adverse effects of climate change and environmental degradation are particularly severe in Africa, which relies heavily on mining and other natural resources for economic growth. Africa's dependence on natural resources and its vulnerability to climate change pose risks to future economic development (Sharma et al., 2021). Nevertheless, Africa's vast untapped mining resources also offer significant opportunities for green business development (UNDP, 2024).

Despite accounting for only 4% of global emissions through mining and other activities, Africa includes 30 of the world's most vulnerable countries in terms of climate adaptation capacity and ecosystem damage (UNDP, 2024). A significant shift in the organisational culture of mining companies is therefore essential for them to harness their potential in addressing environmental challenges (Aggarwal & Agarwala, 2021). AS Khaddage-Soboh et al., (2024) argue, the cultural structure of an organisation is a key factor influencing its environmental practices. In organisational settings, pro-environmental behaviours can be cultivated through the development of a green organisational culture. Such a culture embeds environmental concern in its core values, ensuring widespread adoption and practice across all organisational entities (Abbas & Sağsan, 2019). Building

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on earlier research by Fok et al. (2022), the present study argues that establishing a green organisational culture within mining companies can improve environmental performance through employee green behaviours. These include waste reduction, effective waste management, and energy conservation initiatives (Al-Swidi et al., 2021).

Although a green organisational culture has been recognised as a solution to environmental challenges, literature suggests that the concept is relatively new and sparsely researched (Aggarwal & Agarwala, 2025). Authors such as Al-Alawneh et al. (2024) and Muisyo & Qin, 2021) observe that there is a scarcity of research linking green organisational culture and companies' environmental performance. For this reason, the present study investigated the mediation effect of employee green behaviours on the relationship between green organisational culture and environmental performance. An analysis of available relevant literature indicates that the few available green organisational studies have focused on industries such as textiles (Alotaibi et al., 2024; Sharma et al., 2021) and manufacturing (see Abbas & Dogan, 2022; Abbas & Sağsan, 2019; Allameh et al., 2011; Mirahsani et al., 2024; Mirhadian et al., 2024; Muisyo & Qin, 2021), and pointed to the role of higher education (Al-Alawneh et al., 2024; Aggarwal & Agarwala, 2021). Accordingly, the present study investigated the topic under scrutiny in the context of the mining industry in Zimbabwe. The study focused on selected mining companies operating in the rich coalfields of northern Zimbabwe. The mining and processing of coal pose a significant risk to the environment through groundwater depletion, and air and water pollution.

The present investigation provides significant new insights into green management studies, particularly in the African context. While Africa lags in improving green performance, a response to frequent calls for extensive empirical studies on green management in developing countries is essential (Mondal et al., 2024). The present study, therefore, extends the body of evidence on the link between green organisational culture and companies' environmental performance, an issue which is under-reported in scholarly literature (Muisyo et al., 2022).

2. Theoretical Framework

As in previous studies (see Al-Alawneh et al., 2024; Al-Swidi et al., 2021; Muisyo et al., 2022; Muisyo & Qin, 2021; Yeşiltaş et al., 2022), The Ability Motivation Opportunity (AMO) theory was selected to underpin the present study. The AMO theory suggests that employee performance is a function of their ability (A), level of motivation (M), and the availability of opportunities (O) to utilise their skills. Ability is described as the physiological and cognitive capabilities that enable an individual to perform tasks effectively (Bos-Nehles et al., 2023). The capabilities include knowledge, skills, competencies, and proficiencies that are critical in task performance. Motivation can be considered as the willingness to undertake tasks (Zhang et al., 2025). Opportunities are environmental forces that surround an individual, enabling or constraining task performance (Bos-Nehles et al., 2023). The AMO model suggests that organisational systems and practices enhance performance when they develop employees' competencies (ability), stimulate their willingness to exert effort (motivation), and create participative structures that enable behavioural enactment (opportunity). In strategic human resource management literature, the AMO framework provides a behavioural explanation of how organisational-level practices translate into firm-level outcomes.

In this study, green organisational culture refers to a system of shared environmental values, norms, and expectations that shapes employee behaviour in the mining industry. Drawing on the AMO framework, a green organisational culture enhances employees' green abilities by promoting environmental training, knowledge sharing, and eco-related skill development. It strengthens green motivation by embedding sustainability values, reinforcing pro-environmental norms, and recognising environmentally responsible conduct. Furthermore, it creates green opportunities by empowering employees to participate in environmental initiatives, report ecological risks, and contribute to sustainability decision-making.

The AMO framework, therefore, provides the microfoundational logic linking green organisational culture to environmental performance. While organisational culture establishes the

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strategic orientation toward sustainability, it is employees' green behaviours—such as energy conservation, waste reduction, compliance with environmental standards, and proactive eco-initiatives—that directly influence environmental outcomes. In environmentally intensive industries such as mining, operational-level employee actions are critical determinants of pollution control, resource efficiency, and regulatory compliance. Thus, green employee behaviours constitute the behavioural mechanism through which organisational culture translates into measurable environmental performance improvements.

Accordingly, this study posits that green organisational culture enhances employees' ability, motivation, and opportunity to engage in pro-environmental behaviours, which in turn improve environmental performance. By applying the AMO framework to the mining sector, this research extends the model into the domain of green organisational culture and sustainability, offering a theoretically grounded explanation of how behavioural processes mediate the culture–performance relationship.

Green organisational culture

Organisational culture constitutes both a concept and a tool for establishing routines that link organisational practices to set goals (Fok et al., 2022); hence, it can play a pivotal role in organisations pursuing their environmental agenda. The need to protect the environment has thus given rise to the concept of green organisational culture. Unsurprisingly, there has been a plethora of research on green organisational culture (see Abbas & Dogan, 2022; Abbas & Sağsan, 2019; Aggarwal & Agarwala, 2021b; Al-Alawneh et al., 2024; Al-Swidi et al., 2021; Muisyo et al., 2022; Muisyo & Qin, 2021; Yeşiltaş et al., 2022). Abbas and Dogan (2022) posit that organisational culture is a shared system of beliefs, attitudes, and values that mould or redirect people's behaviours. Hence, in the context of the present research, it implies that organisations pursuing sustainability efforts can create shared beliefs around greening organisational practices. Accordingly, green organisational culture can be defined as a set of values and beliefs that guide different organisational practices towards being environmentally friendly (Aggarwal & Agarwala, 2021).

In organisations where green values are emphasised, employees are expected to incorporate them into their daily routines (Yeşiltaş et al., 2022), thereby enhancing environmental performance. Institutionalising green culture in an organisational context requires employees to have a deep awareness and understanding of managerial practices (Aggarwal & Agarwala, 2021). This implies that greenness must be an inherent part of an organisation's mission and vision. Organisational mission and vision serve to direct people's behaviours; hence, employees can become attuned to exhibit pro-environmental behaviour. The extent to which green organisational culture is practised in an organisation can be analysed using the Harns and Crane (2002) model, which identified three dimensions of green organisational culture as follows:

(a) *The degree of cultural greening*, which refers to the extent to which managers feel that green values and sustainability goals are reflected in organisational creations and artefacts.
(b) *The diffusion of cultural greening,* which refers to the extent to which managers believe these feelings and behaviours are exhibited throughout the organisation.
(c) *Depth of cultural greening,* which refers to the extent to which managers value green initiatives.

An analysis of these three dimensions facilitates a clearer understanding of how widely and deeply shared green values have permeated an organisation.

Green environmental performance

The enhancement of green environmental performance for the benefit of future generations has become a significant focus for policymakers (Pinzone et al., 2016). Accordingly, the concept of green environmental performance has received attention from several scholars and practitioners (see Al-Alawneh et al., 2024; Ben Arfi et al., 2018; Muisyo & Qin, 2021; Sahoo et al., 2023; Zaid et al., 2018; Zhou et al., 2020). Green performance refers to a company's initiatives to achieve and move beyond societal expectations in terms of environmental management goals (Awan et al., 2023). Such performance can be influenced by factors such as green product and process innovations, which enable the integration of environmental sustainability into product development and business

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procedures. This assertion is supported by Sahoo et al. (2023), who state that green environmental performance is achieved through techniques that maximise resource efficiency while safeguarding sustainability goals through pollution control and waste reduction. Factors such as training and development programmes that focus on employee competence in recycling, waste management, and energy efficiency in the workplace can also enhance green performance (Awan et al., 2023). Furthermore, authors such as Al-Alawneh et al. (2024), for instance, argue that green organisational culture also enhances environmental performance. This is because a system of shared beliefs about green thinking can result in extensive employee efforts to achieve green ecological goals.

Green employee behaviour

Numerous environmental challenges, such as noise, urban pollution, global warming, and biodiversity issues, are attributed to human behaviours (Alotaibi et al., 2024). This implies that a paradigm shift in human conduct is paramount to achieving environmental goals. For this reason, employee green behaviour has received attention in recent years as organisations and employees realise the importance of environmental sustainability (see Alotaibi et al., 2024; Al-Swidi et al., 2021; Katz et al., 2022). Employee green behaviour is defined as any behaviour that has a positive environmental impact (Al-Swidi et al., 2021). Factors that determine an employee's green behaviour include individual values and attitudes, organisational culture, and environmental knowledge (Alotaibi et al., 2024). In essence, organisational culture facilitates the spread of green behaviour within an organisation. Employee green behaviours thus include practices such as effective waste management, recycling, and reduction in energy consumption. According to Katz et al. (2022), employee green behaviour can be performed as part of employees' tasks or done directly through employees acting independently. This means that both the organisation and its employees are crucial to achieving environmental goals. However, how people act and behave in organisations is critical as organisations cannot accomplish their sustainability goals without employees at different hierarchical levels demonstrating green behaviours (Katz et al., 2022)

Hypotheses development

Green organisational culture and green performance

Little research has been done on the impact of green organisational culture on environmental performance (Al-Alawneh et al., 2024). This investigation aims to fill this gap. An organisation's culture binds people together in pursuit of a common goal. In this research, fostering an environmentally conscious culture among employees can lead to reduced pollution, less waste, and lower energy consumption. This assertion is supported by Noor Faezah et al. (2024), who opines that, when an organisation embraces a green culture, employees develop a sense of responsibility for environmental protection. Indeed, the culture of an organisation has been identified as a key determinant of ecological consciousness (Yeşiltaş et al., 2022). When a green culture is adopted throughout the entire organisation, this can lead to improvements in employees' criteria for performing daily tasks (Noor Faezah et al., 2024), resulting in more efficient production methods, including better water use and material recycling. Previous research suggests that a green organisational culture enhances environmental performance (see Abbas & Dogan, 2022; Abbas & Khan, 2023; Al-Alawneh et al., 2024; Noor Faezah et al., 2024).

It can therefore be hypothesised that:

H1: *Green organisational culture positively influences environmental performance.*

Green organisational culture and employee green behaviour

It seems highly probable that environmental sustainability goals can be achieved through the efforts of an organisation's employees (Alotaibi et al., 2024). This implies that employees must have adequate green knowledge and demonstrate sustainability values. In this regard, an organisation's culture is crucial for enhancing employees' understanding of green knowledge and values, which are essential for achieving environmental sustainability goals. This view is supported by Yeşiltaş et al. (2022), who state that a green organisational culture influences employee green behaviour by enhancing environmental consciousness. If employees understand that cultural values require them

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to act ecologically, such values will probably trigger pro-environmental behaviour. At the core of spreading green knowledge throughout the entire organisation is a culture of knowledge sharing. As Yeşiltaş et al. (2022) argue, successful environmental management requires green values to be shared among organisational members. In an organisational context, explicit green knowledge can be shared through procedure manuals, textbooks, and journals, whereas implicit green knowledge can be disseminated through workshops and meetings. Past research indicates that green organisational culture improves employee green behaviour (see Katz et al., 2022; Noor Faezah et al., 2024; Zhang et al., 2021).

Hence, it can be hypothesised that:

H2: *A green organisational culture positively influences employees' green behaviour.*

Green employee behaviours and environmental performance

As highlighted, employees play a pivotal role in preserving and improving the environment (see Zacher et al., 2025; Katz et al., 2022). For instance, the green behaviour of employees may decrease the generation and dumping of harmful substances, as well as reduce the consumption of organisational resources (Zhang et al., 2021), thus improving the environment. Green employee behaviours are primarily driven by their attitudes towards environmental greening and their green knowledge. If the attitude is positive and green expertise is available, this can lead to extensive pro-environmental behaviour. These pro-environmental behaviours include environmentally oriented organisational citizenship behaviour and the development of environmentally friendly products (Zhang et al., 2021). Other voluntary green behaviours, such as actively participating in sharing environmental knowledge, identifying environmental issues, and providing pro-environmental suggestions to management, are critical in enhancing environmental performance (Mirahsani et al., 2024). Previous research argues that employee green behaviour has a positive impact on environmental performance (see Alshebami, 2021; Al-Swidi et al., 2021; Zhang et al., 2021).

Hence, it can be hypothesised that:

H3: *Employee green behaviour positively influences environmental performance.*

The role of green employee behaviour

The mediating role of employee green behaviour in environmental studies has been examined (see Alshebami, 2021; Nisar et al., 2024). In the context of the present research, the culture of an organisation is reflected through employees' green behaviours, which are instrumental in improving environmental performance. As part of building a green culture, an organisation can create green values, which are assimilated throughout the organisation (Alshebami, 2021). These values can be incorporated into employees' daily job tasks (Alotaibi et al., 2024). This implies that, as employees carry out their daily routines, they will readily advance the environmental agenda. A conducive organisational culture that encourages environmental initiatives can also be created. This can involve setting aside idea times to discuss environmental protection issues and rewarding environmental protection idea champions. Such an environment may see employees performing voluntary acts, such as personal environmental initiatives that exceed organisational expectations, environmental protection lobbying and activism (Alshebami, 2021).

It can therefore be hypothesised that:

H4: *Green employee behaviour mediates green organisational culture and environmental performance.*

3. Materials and Methods

Research paradigm and design

This research adopted the ontological position of objectivism and the epistemological position of positivism. Accordingly, a cross-sectional design was employed, and a quantitative approach was adopted to test the hypotheses underlying this study. This is in line with Saunders et al. (2009), who

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stated that positivism emphasises quantifiable observations that can be analysed statistically, as in this case. Further, in a similar vein, Yilmaz (2013) opined that quantitative research is based on the objectivist epistemology and thus seeks to develop explanatory universal laws in social behaviour by statistically measuring and analysing causal relationships amongst variables. In this study, the relationships among green organisational culture, green employee behaviours, and environmental performance were examined.

Population and sampling

Zimbabwe's mining sector is highly diversified, mining nearly 40 different minerals. The main minerals include platinum-group metals (PGMs), chrome, gold, coal, lithium, and diamonds. Northern Zimbabwe has abundant coal deposits, and large companies are involved in extracting and processing the resource. This area was therefore a valuable source of information for green studies. The research targeted 900 employees in selected coal mining companies. These employees were selected based on their direct involvement in mining operations. According to Israel (1992), at a 95% confidence level, a sample size of at least 277 participants is sufficient for a population of this magnitude. In adherence with the simple random sampling technique, a complete sampling frame was obtained, and each population element was assigned a unique identification number from 1 to 900. Using a computer-generated random number procedure, 277 cases were selected, ensuring that each member of the population had an equal and independent probability of selectio

This study adhered to all relevant ethical procedures and guidelines. Additionally, participants were assured of confidentiality and could opt out of the research at any time without pressure. A structured questionnaire, including an informed consent section, was created and uploaded to SurveyMonkey. An online link generated by the platform was sent to participants' email addresses, obtained from the Human Resources divisions of the selected companies. The participants' demographics are summarised in Table 1 below:

Table 1. Participants' demographics.

		N	Percentage
Educational level			
High school		26	10%
Diploma		139	50%
Degree		112	40%
Organisation tenure	< 10 Years	83	30%
	10 –15 years	110	40%
	> 15 years	84	30%

Source: Created by Author.

Research instrument measures

The research variables were examined using previously validated measurement items in the literature. The structured questionnaire items were piloted with individuals from the research population. A five-point Likert scale was used to measure the constructs, ranging from 1 'strongly disagree' to 5 'strongly agree'.

Green organisational culture: Green organisational culture was operationalised with a scale developed by Yeşiltaş et al. (2022). A sample item from the scale is: '*Our organisation makes a concerted effort to make every employee understand the importance of environmental protection.'*

Employee green behaviour: Employee green behaviour was measured using a combination of items adapted from the work of Mirahsani et al. (2024) and Yeşiltaş et al. (2022). A sample item from the scale is: '*Today I completed my tasks in an environmentally friendly way.'*

Environmental performance: The environmental performance scale used in this study was based on the work of Muisyo and Qin (2021). A sample item from the scale is: '*Our company uses resource materials that reduce pollution.'*

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Reliability and validity

The data were assessed for validity and reliability as discussed below:

Indicator reliability: If a reflective indicator loading is higher than 0.5, the item is a good measurement of a latent construct (Hulland, 1999). Accordingly, all the indicator loadings exceeded 0.5 (see Table 2).

Internal consistency reliability: This study assessed internal consistency reliability using Composite Reliability (CR) and Cronbach's alpha. Gefen et al. (2000) state that a CR value of at least 0.7 indicates adequate internal consistency reliability. Hair et al. (2017) suggest that Cronbach alpha (α) values greater than 0.60 are widely considered desirable in research to indicate internal consistency reliability. Cronbach's alpha and Composite Reliability thresholds were met.

Convergent reliability: Convergent reliability is the extent to which a measure correlates positively with alternative measures of the same construct (Hair et al., 2012). Average Variance Extracted is used to assess convergent reliability and should exceed 0.5. Table 2 below confirms that AVE values are acceptable.

Table 2. Factor Scores, Mean, Average Variance Extracted (AVE), Composite Reliability(CR), and Variance Inflation Factor(VIF).

	Variable	Factor Score	Alpha	AVE	CR	VIF
	Green organisational culture		**0.74**	**0.50**	**0.83**	
GOC1	Our organisation makes a concerted effort to make every employee understand the importance of environmental protection	0.523				1.765
GOC2	Our organisation has a clear policy statement urging environmental awareness in every area	0.735				1.675
GOC3	Preserving the environment is a central corporate value in our organisation	0.771				1.876
GOC4	Our organisation links environmental objectives with our corporate goals	0.771				1.897
GOC5	Our organisation designs processes that minimise environmental impact	0.697				1.876
	Gren employee behaviours		**0.81**	**0.63**	**0.87**	
GEB1	Today I completed my tasks in an environmentally friendly way.	0.805				1.777
GEB2	I always perform my job duties using environmentally friendly solutions	0.846				1.765
GEB3	I take part in environmentally friendly programmes	0.758				1.877
GEB4	At work, I perform environmental tasks that are beyond organisational expectations	0.766				1.654
	Environmental performance		**0.89**	**0.74**	**0.92**	
EP1	Our company uses resource materials that reduce pollution	0.863				1.786
EP2	Our organisational processes lead to waste reduction	0.850				1.766

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EP3	This organisation is keen on the economic consumption of resources	0.885				1.654
EP4	Our organisation is committed to recycling efficiency	0.834				1.777

Source: Created by the author.

Discriminant validity

According to Hair (2016), discriminant validity can be evaluated using the Fornell-Larcker criterion. This method compares the square roots of the AVEs with the correlations of the latent variable with other constructs. The square root of the AVE for each construct should be greater than its correlation with any other construct, as shown in Table 3 below:

Table 3. Discriminant validity.

	Environmental performance	**Green employee behaviours**	**Green organisational culture**
Environmental performance	**0.858**		
Green employee behaviours	0.605	**0.794**	
Green organisational culture	0.463	0.450	**0.705**

The discriminant validity values are shown diagonally in bold, Source: Created by the author.

Empirical Results

Common Method Bias (CMB)

The study employed Harman's one-factor test (Harman, 1976) and the Variance Inflation Factor (VIF) (Kock, 2015) to assess Common Method Bias (CMB). According to Harman's test, no single factor should account for more than 50% of the variance among variables, while VIF values should remain below 3.3 (Kock, 2015). The results met both criteria: a single factor explained 29.51% of the variance, and VIFs for all items were under 3.3 (see Table 2), indicating the dataset was free from CMB.

Evaluation of the structural model

This study assessed the predictive and explanatory power of the structural model. The predictive accuracy was assessed using the Q^2 values wheres the explanatory power was assessed using the Coefficient of Determination (R^2) and the Effect Size (F^2) (Rubel et al., 2020)

In SMART PLS, the Q^2 is calculated using the blindfolding technique. As suggested by Chin (1988), the Q^2 value should be greater than zero(0). The Q2 values were 0.13 and 0.11 for environmental performance and green employee behaviours, respectively. This implies that the predictive accuracy of the model was strong.

Table 4. Coefficient of Determination (R^2).

Exogenous Variable	**Endogenous Variable**	**R^2**
Green organisational culture + Green employee behaviours	Environmental performance	0.411
Green Organisational Culture	Green employee behaviours	0.202

Source: Owner Creation.

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The R^2 was used to evaluate the model's explanatory power. As shown in Figure 1 below, green organisational culture and green employee behaviours explained 41.1% of the variance in environmental performance. However, green employee behaviours accounted for a greater explanatory contribution (0.497), whereas green organisational culture accounted for 0.239 of the variance. On the other hand, green organisational culture explained 20.2% of the variance in green employee behaviours. These results are indicative of a strong explanatory model.

Table 5. Effect Size (F^2).

Exogenous variable	**Endogenous variable**	**F^2**
Green organisational culture	Environmental Performance	0.175
Green organisational culture	Green Employee Behaviours	0.222
Green Employee Behaviours	Environmental Performance	0.298

Source: Owner Creation.

According to Cohen (1988), f^2 values are interpreted as follows: values close to 0.02 =small, 0.15= medium, 0.35 = large. Accordingly, green employee behaviours had the greatest effect size on environmental performance (0.298). Green organisational culture had a high effect on green employee behaviours and a medium impact on environmental performance (0.175). These results imply that exogenous variables had an explanatory power on the endogenous variables.

Structural Equation Modelling

SMARTPLS 4 was conducted to test the hypotheses of this study. The results are shown in Figure 1 below:

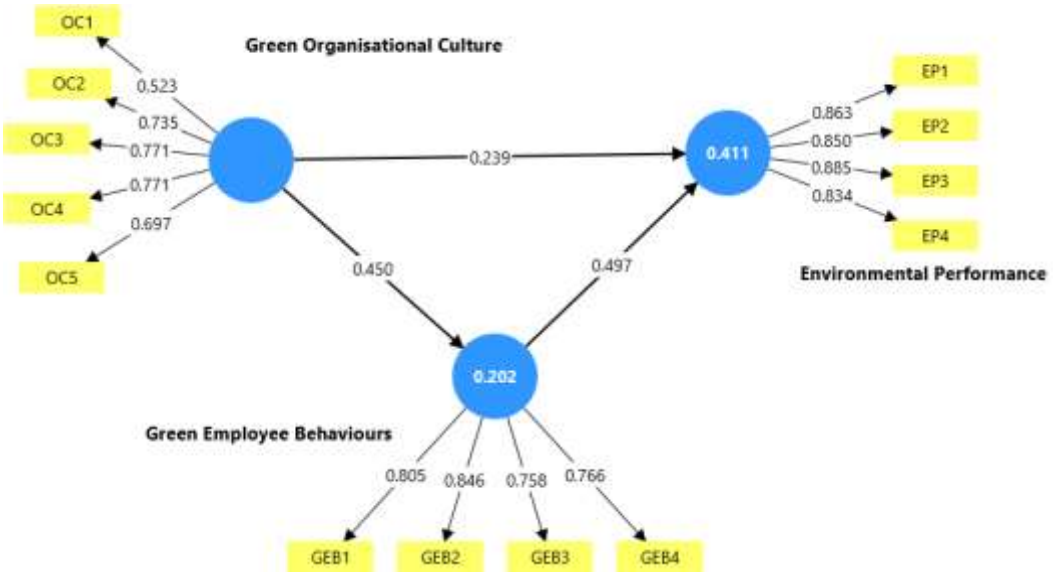

Figure 1. Path relationships. Source: SMARTPLS 4.

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Direct effects

Table 6 below shows that green organisational culture significantly impacted environmental performance and green employee behaviours *(β = 0.239, p-value = 0.00; β= 0.450, p-value = 0.00)*. Hence, *H1* and *H2* were accepted. Furthermore, green employee behaviours significantly impacted environmental performance *(β= 0.497, p-value = 0.00).* Hence, *H3 was* accepted.

Table 6. Path coefficients and probability values.

Hypothesis	Path	Path coefficient	P-value	Decision
H1	Green organisational culture >>> Environmental performance	0.239	0.00	Accepted
H2	Green organisational culture >>> Green employee behaviours	0.450	0.00	Accepted
H3	Green employee behaviours >>> Environmental performance	0.497	0.00	Accepted

Mediation effects of green employee behaviours

The results showed that green employee behaviours partially mediated the relationship between green organisational culture and environmental performance (β = 0.224, p < 0.001); hence, *H4* was accepted.

Discussion

The present study provides insights that may be of value from both theoretical and managerial perspectives. It is one of the earliest known attempts to examine the effect of green organisational culture on environmental performance in the Zimbabwean mining industry. In other words, this investigation extends our understanding of the joint effect of green organisational culture and green employee behaviours on environmental performance, both of which are relatively new areas of study (Anwar et al., 2020). The empirical findings of the present study confirm all four stated hypotheses. Through the mediation analysis, this study confirmed the mediator role of green employee behaviours. A brief synopsis of the findings is presented below:

Firstly, a green organisational culture was found to positively impact environmental performance (β = 0.239, p < 0.001). This finding aligns with the work of authors such as Abbas & Dogan, (2022), Abbas & Khan (2023) and Al-Alawneh et al. (2024), who state that an organisation's culture is a critical ingredient in managing the environment effectively. The culture of an organisation emphasises strict adherence to values that emphasise respect for nature, sustainable living, and responsible consumption. In the context of the mining industry, these values include prioritising recycling, conserving energy and water, reducing waste, supporting local and organic food, choosing sustainable transportation, and reclaiming mined land. All such values, if pursued, can lead to a better immediate environment and a broader one.

Secondly, corresponding with the findings of Yeşiltaş et al. (2022), a green organisational culture has a significant impact on green employee behaviours (β = 0.450, p < 0.001). This implies that a green organisational culture influences green employee behaviours. This occurs through a culture that enhances environmental awareness among employees. In an organisation where green ethical values are emphasised, employees are likely to engage in green behaviours (Alotaibi et al., 2024). In the context of the mining industry, managers can instil green values in employees by focusing on education and practical training and fostering a strong ethical climate that prioritises sustainability. This involves demonstrating how environmental responsibility aligns with the company's overall goals and highlights the positive impact of green practices on the environment and the business.

Thirdly, green employee behaviours significantly impacted environmental performance (β = 0.497, p < 0.001). This corroborates the work of Zhang et al. (2021). Since human behaviour is linked to environmental degradation, it implies that by promoting green employee behaviours,

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organisations can contribute to environmental protection. People in the workplace are responsible for daily work routines; hence, positive ecological actions from employees can help reduce environmental degradation. Green employee behaviours essential for environmental protection include active participation in environmental knowledge-sharing symposia, identification of environmental issues, and suggestions to enhance environmental management (Zhang et al., 2021). Lastly, green employee behaviours were established to be an essential mediator in the link between green organisational culture and environmental performance ($\beta = 0.224$, $p < 0.001$) – a finding that is consistent with the work of Shahzad et al. (2023). Green employee behaviours can be conceived as the core of environmental sustainability because organisations cannot accomplish their ecological sustainability goals without the assistance of their employees (Katz et al., 2022), Hence, the employee complement can facilitate the achievement of environmental goals.

Theoretical significance

The results of this investigation have contributed significantly to supporting current theory. It proved, firstly, that a green organisational culture is a significant predictor of environmental performance; hence, advancing the characteristics of AMO theory as highlighted earlier. The central premise of AMO theory is that employee performance is a function of their ability, motivation, and the availability of opportunities to utilise their skills. A green organisational culture can thus facilitate employees' acquisition of green knowledge. The accumulation of such green knowledge can motivate employees to act responsibly towards the environment, thereby improving environmental performance.

Secondly, prior studies on green organisational culture (see Abbas & Dogan, 2022; Al-Alawneh et al., 2024; Al-Swidi et al., 2021; Muisyo et al., 2022; Muisyo & Qin, 2021), green employee behaviours (see Katz et al., 2022; Mirahsani et al., 2024; Nasir Ansari & Irfan, 2023; Nisar et al., 2024; Rubel et al., 2020) and environmental performance (see Al-Alawneh et al., 2024; Imran et al., 2021; Sahoo et al., 2023), mainly relate to contexts in the global North. The present study thus extends the body of evidence on green organisational culture, green employee behaviours, and environmental performance from a global South perspective, where green studies are still limited.

Thirdly, although studies on green organisational culture are becoming widely established, little is known about the link between organisational culture and a company's environmental performance (Muisyo & Qin, 2021). In this respectThe present study has narrowed the existing knowledge gap.

Practical implications

The current research presents valuable practical perspectives for mining organisations seeking to become greener. Firstly, while several environmental management systems are available to facilitate the greening of mines, such systems can be very costly. An alternative, more cost-effective way to achieve environmental goals is to create a green organisational culture that fosters green employee behaviours. This argument is supported by the findings from the present study, which establish that a green organisational culture is a significant predictor of green employee behaviours and environmental performance.

Secondly, this study can significantly shape green thinking among mining executives. A key aspect of this mindset is fostering a green organisational culture, which is a crucial predictor of environmental performance. Mining companies can develop such a culture through leadership commitment, with company leaders establishing clear environmental goals and values. These objectives should be integrated into the organisational mission and overall strategy vision. Environmental goals and values must be thoroughly communicated to ensure they are understood throughout the entire organisation, supporting the widespread adoption of a culture of environmental sustainability (Aggarwal & Agarwala, 2021).

Thirdly, this study has the potential to impact managerial initiatives, such as green training. Ongoing training that emphasises sustainable operational practices can cover topics such as resource efficiency, waste reduction, and site restoration. Site restoration is particularly vital in regions with open-cast mining. Land reclamation enhances and restores biodiversity, a key concern in sustainability management.

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Fourthly, the present research has also confirmed that green employee behaviours significantly impact environmental performance. Thus, to promote green employee behaviours, mining companies can reward employees who demonstrate them. From a policy perspective, it is also essential to create policies and regulations that encourage and incentivise mining companies to adopt green practices, such as tax breaks and green grants.

Conclusion

This study examined the relationship between green organisational culture, green employee behaviours, and environmental performance in the mining industry. The findings reveal that green organisational culture significantly enhances both environmental performance and green employee behaviours. Additionally, green employee behaviours significantly improve environmental performance.

Importantly, green employee behaviours were found to partially mediate the relationship between green organisational culture and environmental performance. This indicates that while green culture directly strengthens environmental outcomes, part of its influence operates through shaping employees' pro-environmental actions.

Overall, the results highlight that cultivating a strong green organisational culture is a strategic pathway to improving environmental performance, particularly when it translates into meaningful green employee behaviours.

Limitations

The present study addresses an essential concept in organisational behaviour, enhancing our understanding of green organisational culture, green employee behaviours, and environmental performance. Since the study was conducted in a Zimbabwean setting, it might have compromised the generalisability of the findings to other parts of Africa and the rest of the world. However, it can provide potentially valuable information to companies in Africa and the global South. The sample size might represent a small fraction of the mining industry, which opens the opportunity for other scholars to test the proposed conceptual model in large-sample quantitative studies. Further, the study utilized self-reported measures, which affect research results. However, despite these limitations, this study has provided practical empirical evidence of the relationships among the identified variables.

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