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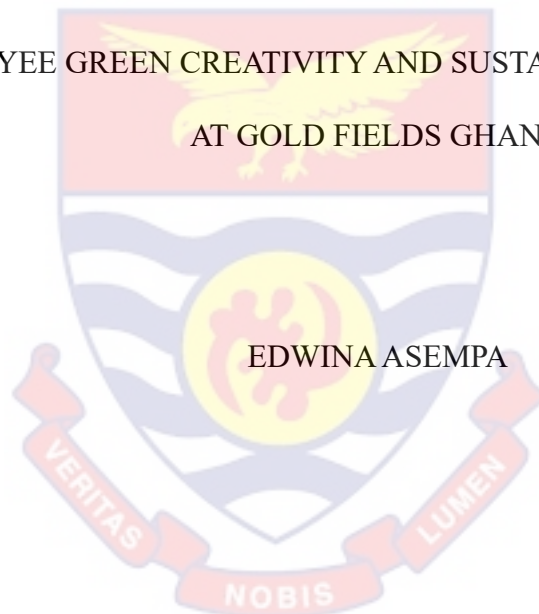
ORGANISATIONAL IDENTIFICATION AND ORGANISATIONAL
ENVIRONMENTAL CITIZENSHIP BEHAVIOUR: THE ROLE OF
EMPLOYEE GREEN CREATIVITY AND SUSTAINABLE LEADERSHIP
AT GOLD FIELDS GHANA



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Thesis submitted to the Department of Management Studies, School of
Business of the College of Humanity and Legal Studies, University of Cape
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Philosophy Degree in Public Policy and Management.

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DECLARATION

Candidate's Declaration

I therefore declare that this thesis is the result of my own independent research and that no portion of it was submitted for another degree to this university or elsewhere.

Candidate's SignatureDate

Name: Edwina Asempa

Supervisor's Declaration

I therefore declare that, in accordance with the guidelines set out by the University of Cape Coast for the supervision of the thesis, the preparation and presentation of this thesis have been supervised.

Supervisor's SignatureDate

Name: Prof. Abraham Ansong

ABSTRACT

This study examined the relationship between Organisational Identification (OI) and Organisational Environmental Citizenship Behaviour (OECB), with particular attention to the mediating role of Employee Green Creativity (EGC) and the moderating role of Sustainable Leadership (SL) among employees in the mining sector, specifically at Gold Fields. A quantitative research approach was adopted, and survey data were collected from 302 employees and analysed using SmartPLS 4.0. The findings revealed that OI significantly predicted both EGC and OECB. Among the predictors, EGC exerted the strongest direct effect on OECB and also partially mediated the relationship between OI and OECB. However, the moderating effect of SL on the relationship between OI and OECB was statistically insignificant, suggesting that the influence of leadership in this context may be contingent upon other organisational or contextual conditions. The study therefore concludes that employee creativity and organisational identification are key drivers of pro-environmental behaviour within the mining sector. Although Sustainable Leadership did not significantly moderate the OI–OECB relationship, leadership remains important for advancing broader sustainability strategies. Overall, the findings reinforce the importance of psychological and behavioural factors in promoting corporate environmental responsibility. Accordingly, the study recommends that organisations strengthen environmental citizenship by fostering employee green creativity, enhancing organisational identification, and embedding sustainability within leadership development programmes and organisational practices.

KEYWORDS

Affective Commitment

Employee Green Creativity

Environmental Sustainability

Mining Sector

Organisational Environmental Citizenship Behaviour

Organisational Identification

Sustainable Leadership

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DEDICATION

To my family.

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LIST OF ACRONYMS

AC	Affective Commitment
AVE	Average Variance Extracted
CFA	Confirmatory Factor Analysis
CSR	Corporate Social Responsibility
EGC	Employee Green Creativity
GDP	Gross Domestic Product
OECEB	Organisational Environmental Citizenship Behaviour
OI	Organisational Identification
PLS-SEM	Partial Least Squares Structural Equation Modelling
SDGs	Sustainable Development Goals
SL	Sustainable Leadership
SPSS	Statistical Package for the Social Sciences
UCC	University of Cape Coast
VIF	Variance Inflation Factor

CHAPTER ONE

INTRODUCTION

Overview

The gold mining sector plays a role immensely to national economies through employment creation and support to gross domestic product, yet its resource-intensive operations often result in serious environmental challenges such as land degradation, deforestation, and pollution (World Gold Council, 2020; Mensah & Okyere, 2019). In response to increasing environmental concerns, organisations such as Gold Fields Ghana are placing greater emphasis on sustainability by encouraging environmentally responsible behaviour among employees (Owusu & Asare, 2021).

Against this background, this study examines how organisational identification, understood as employees' psychological attachment to their organisation, influences organisational environmental citizenship behaviour. It further investigates the mediating role of employee green creativity in translating identification into sustainability-orientated actions, alongside how these relationships are influenced by sustainable leadership. Drawing on social identity theory, the componential theory of creativity, and transformational leadership theory, the study seeks to offer understandings that can help mining organisations strengthen employee-driven environmental stewardship and enhance long-term sustainability practices.

Background to the Study

Despite its economic importance, the Ghanaian mining sector continues to face considerable challenges in advancing environmental sustainability. The growing urgency of ecological protection has intensified global discussions on

the responsibility of organisations to mitigate environmental degradation and promote sustainable development (United Nations, 2019).

Organisations are dealing with increasing pressure to connect their operations with global sustainability frameworks like the Sustainable Development Goals as the globe struggles with climate change, resource depletion, and environmental pollution. Within this context, organisational environmental citizenship behaviour (OECB) has emerged as a critical component of organisational sustainability. OECB refers to employees' voluntary, environmentally responsible actions that extend beyond formal job requirements, including reducing energy use, minimising waste, and supporting environmental initiatives (Boiral & Paillé, 2012; Zientara & Zamojska, 2018).

Organisational identification, which represents the psychological connection workers form with their company, is a significant antecedent of OECB. Employees are more inclined to act in ways that advance organisational goals when they believe there is a significant connection between their personal values and those aims (Ashforth & Mael, 1989 in). According to Social Identity Theory, people get some of their sense of self from belonging to social groupings, such as organisations (Tajfel & Turner, 1986). Research indicates that workers who have a strong sense of identity with their company are more likely to internalise its sustainability objectives and take on the responsibility of promoting them (Ramus & Killmer, 2019). In environmentally sensitive industries such as mining, strengthening organisational identification may therefore be a key mechanism for encouraging voluntary environmental initiatives.

Employee green creativity represents another important factor influencing OECB. Green creativity refers to the generation of innovative ideas and solutions aimed at addressing environmental challenges within the organisation (Chen & Chang, 2013). Through initiatives like waste reduction, increased energy efficiency, and environmentally conscious operational procedures, employees who exhibit green ingenuity support sustainability. The componential theory of creativity emphasises that organisational climate, motivation, and relevant skills are essential for fostering innovative outcomes (Amabile, 1996). In the mining sector, green creativity can therefore support environmentally responsible operational improvements, including better waste management systems and reduced emissions (Chowdhury & Sarkar, 2018). However, the extent to which creative ideas translate into practical environmental action often depends on organisational leadership support.

Sustainable leadership is thus considered an important contextual factor shaping sustainability outcomes. Sustainable leadership focuses on long-term value creation by balancing environmental, social, and economic priorities (Avery & Bergsteiner, 2021). Leaders who prioritise sustainability influence employees by modelling ethical conduct, encouraging responsible decision-making, and supporting innovation. Transformational leadership theory reinforces this perspective by highlighting how leaders inspire employees to pursue collective organisational goals beyond immediate self-interest (Bass, 1985). In the mining sector, where operational priorities have traditionally emphasised short-term productivity and profitability, sustainable leadership is important in encouraging environmentally responsible behaviour and promoting organisational innovation (DuBrin, 2015; Hilson & Murck, 2020).

In addition to these core predictors, employee affective commitment may also influence environmental behaviour in organisations. Employees' emotional attachment to their company and desire to stay a part of it are referred to as affective commitment (Meyer & Allen, 1991). Workers who have a strong emotional bond with their company are more likely to support its objectives, put out extra effort, and take part in voluntary organisational activities, such as sustainability projects (Meyer et al., 2012). In order to account for its possible impact on organisational environmental citizenship behaviour and to separate the distinct effects of organisational identification, green creativity, and sustainable leadership within the Ghanaian mining context, affective commitment is introduced as a control variable in this study.

Statement of the Problem

The mining industry continues to attract criticism for its substantial environmental footprint, including land degradation, deforestation, water pollution, and greenhouse gas emissions (Hilson, 2021; Tetteh & Fugar, 2020). In Ghana, where gold mining remains a major economic driver, these environmental concerns are particularly pronounced (Akabzaa & Darimani, 2021; Owusu & Frimpong, 2018). Persistent environmental degradation associated with mining activities has raised growing concern among host communities, regulators, and environmental advocacy groups (Amponsah-Tawiah & Dartey-Baah, 2021). Despite these pressures, many mining firms continue to struggle to fully integrate sustainable practices into their operations (Bansah et al., 2019). Employee inconsistency in exhibiting organisational environmental citizenship behaviour (OECB), which is crucial for maintaining

workplace environmental initiatives, is a major underlying problem (Norton et al., 2015).

One of the top gold mining firms in the nation, Gold Fields Ghana, works in a setting where environmental responsibility is becoming more and more important (Hilson, 2021). However, fostering voluntary pro-environmental behaviour among employees remains difficult. Employees may feel disconnected from organisational sustainability goals or view environmental practices as secondary to operational performance demands (Boiral & Paillé, 2022). Ghana's socio-environmental conditions, including strong community expectations and reliance on natural resources, further complicate sustainability implementation (Boadi & Kuitunen, 2022; Amankwah & Anim-Sackey, 2020). In addition, employee disengagement from environmental initiatives, resistance to green innovation, and continued emphasis on traditional performance indicators such as output and profitability have slowed sustainability progress within the sector (Chen & Chang, 2013).

Organisational identification has been recognised as a potential driver of pro-environmental behaviour because it reflects the degree to which workers align with organisational values and objectives (Ashforth & Mael, 1989). Yet within the mining context, limited empirical evidence explains how identification translates into practical environmental action. In Ghana, employees' engagement with environmental practices may also be shaped by cultural norms, community expectations, and internal organisational dynamics (Twerefou, 2019; Hilson & Nyame, 2019). Furthermore, the role of employee green creativity — the capacity to generate innovative and workable environmental solutions — remains insufficiently examined in the Ghanaian

mining sector (Chen & Chang, 2013). Although green creativity may support sustainable operational improvements, its development can be constrained by organisational barriers such as inadequate leadership support and limited resources (Maak & Pless, 2019).

Leadership practices represent another critical factor influencing environmental outcomes in organisations. At Gold Fields Ghana, the function of sustainable leadership in stimulating green creativity and reinforcing OEGB remains unclear (Avery & Bergsteiner, 2021). Sustainable leadership, which balances economic, social, and environmental priorities, is widely considered essential for cultivating a sustainability-orientated organisational culture (Maak & Pless, 2019). However, evidence from Ghana suggests that leadership approaches in the mining industry often prioritise short-term operational targets due to competitive pressures, thereby constraining long-term environmental initiatives (Kemp, 2020; Aryee et al., 2020). Such leadership limitations continue to impede environmental progress within the sector.

Although global studies highlight the importance of combining organisational identification, employee creativity, and sustainability-orientated leadership to promote environmental citizenship behaviour, empirical research examining these relationships within Ghana's mining sector remains limited (Hilson, 2021; Boiral & Paillé, 2022; Boadi & Kuitunen, 2022). This gap is significant given the distinctive socio-environmental challenges facing the industry, including community conflicts, weak regulatory enforcement, and dependence on natural resources (Amponsah-Tawiah & Dartey-Baah, 2021).

Without organisational identification, employee green creativity, and sustainable leadership jointly influence OEGB, mining firms may struggle to

design effective internal sustainability strategies. Therefore, using data from Gold Fields Ghana, this study investigates the mediating role of employee green creativity and the moderating role of sustainable leadership within the Ghanaian mining sector while examining the relationship between organisational identification and organisational environmental citizenship behaviour.

Purpose of the study

With a focus on the moderating role of sustainable leadership and the mediating role of employee green creativity among Gold Fields Ghana employees, the study aims to investigate the impact of organisational identification on organisational environmental citizenship behaviour.

Objectives of the Study

Specifically, the study seeks to;

1. Examine the effect of organisational identification on organisational environmental citizenship behaviour.
2. Determine the effect of organisational identification on employee green creativity.
3. Assess the effect of employee green creativity on organisational environmental citizenship behaviour.
4. Investigate the mediating role of employee green creativity in the relationship between organisational identification and organisational environmental citizenship behaviour.
5. Analyse the moderating role of sustainable leadership on the relationship between organisational identification and organisational environmental citizenship behaviour.

Research Hypotheses

The study sought to test the following hypotheses:

1. H₁: Organisational identification has a significant positive effect on organisational environmental citizenship behaviour.
2. H₂: Organisational identification has a significant positive effect on employee green creativity.
3. H₃: Employee green creativity has a significant positive effect on organisational environmental citizenship behaviour.
4. H₄: Employee green creativity significantly mediates the relationship between organisational identification and organisational environmental citizenship behaviour.
5. H₅: Sustainable leadership significantly moderates the relationship between organisational identification and organisational environmental citizenship behaviour.

Significance of the Study

This work fills up important knowledge gaps about the link. within the mining industry, with an emphasis on Gold Fields Ghana, between organisational identity, employee green creativity, sustainable leadership, and organisational environmental citizenship behaviour (OECB). By integrating these variables, it enriches existing theories like Social Identity Theory, Componential Theory of Creativity and Transformational Leadership Theory, while offering a contextualised understanding of sustainability in resource-intensive industries, particularly in developing countries like Ghana. The study's findings will expand the literature on environmental sustainability and

organisational behaviour, contributing valuable insights into fostering OEGB in industries with significant environmental impacts.

Practically, the research has implications for mining companies, policymakers, and scholars. For Gold Fields Ghana, it provides actionable strategies for improving employee engagement in sustainability initiatives, enhancing environmental performance, and building stronger stakeholder relationships. The results can be used by regulators and policymakers to create policies that encourage sustainable leadership and employee-driven environmental practices, supporting broader goals like the United Nations Sustainable Development Goals (SDGs). Additionally, this study serves as a reference for future research, offering a foundation for exploring sustainability-related themes in other industries and contexts. Through its dual focus on theory and practice, the study advances the agenda for sustainable organisational behaviour in Ghana's mining sector.

Delimitation of the Study

This study explores the relationship between organisational identification, employee green creativity, sustainable leadership, and organisational environmental citizenship behaviour (OEGB) among mining staff at Gold Fields Ghana. It is geographically confined to the company's operations in Ghana's mining sector, with a focus on internal staff rather than external stakeholders. The research examines the key variables of organisational identification, green creativity, sustainable leadership, and OEGB, excluding other potential factors like organisational culture or financial incentives. The study is conducted within a specific timeframe, focusing on current

sustainability practices without addressing historical or future trends, ensuring a focused scope for the research.

Limitations

This research offers insightful information about the connection between organisational identification, employee green creativity, sustainable leadership, and organisational environmental citizenship behaviour at Gold Fields Ghana; however, several limitations should be acknowledged. First, the results may not be as applicable to other mining companies, industries, or national settings because the study was limited to a single mining company. Organisational structures, leadership practices, and sustainability policies vary across firms, and these differences may influence employee behaviour. In addition, the research focused solely on mining staff, which may not fully capture the perspectives of other organisational actors such as senior executives or external contractors. The use of a cross-sectional research design also limits the ability to establish causal relationships among the study variables, as the data were collected at one point in time rather than across multiple periods.

Furthermore, the potential for common method bias is introduced by the use of self-reported survey data and socially desirable responses, particularly given the sensitive nature of environmental responsibility within the mining sector. Respondents may have overstated their environmentally responsible behaviours or perceptions of organisational practices. The study also excluded external stakeholders, including local communities, regulators, and environmental groups, whose perspectives could provide a more in-depth knowledge of sustainability practices within the organisation. Finally, the study concentrated on selected psychological and leadership variables, meaning that

other potentially relevant factors — such as organisational culture, regulatory pressures, or resource availability — were not examined. Therefore, while evaluating the results and directing future study, these limitations should be taken into account.

Definition of Terms

Organisational Identification

In this study, organisational identification refers to the extent to which employees perceive a sense of belonging to their organisation and align their self-concept with its values, goals, and mission. It is operationalised as employees' psychological attachment and perceived oneness with the organisation, measured through their agreement with statements reflecting organisational pride, loyalty, and shared values (Ashforth & Mael, 1989; Mael & Ashforth, 1992).

Employee Green Creativity

The degree to which staff members come up with original, realistic, and beneficial ideas to enhance environmental sustainability inside the company is known as employee green innovation. It is operationalised in this study as workers' self-reported participation in suggesting novel eco-friendly procedures, practices, or solutions at work (Chen & Chang, 2013).

Sustainable Leadership

Sustainable leadership refers to leadership behaviours that promote long-term organisational success by balancing economic performance with environmental responsibility and social well-being. In this study, it is operationalised as employees' perceptions of leaders' commitment to

sustainability, ethical decision-making, and support for environmentally responsible practices (Avery & Bergsteiner, 2011; McCann & Holt, 2010).

Organisational Environmental Citizenship Behaviour (OECB)

Organisational environmental citizenship behaviour refers to discretionary employee actions that go beyond formal job duties to support environmental sustainability within the organisation. In this study, it is operationalised as employees' voluntary engagement in behaviours such as conserving resources, reducing waste, and participating in organisational environmental initiatives (Boiral & Paillé, 2012).

Organisation of the Study

This material is organised and presented methodically in five chapters. The study's background, problem statement, research questions, significance, delimitations, limitations, and terminology definitions are all covered in Chapter One, which also serves as an introduction. Chapter Two provides an overview of relevant literature. In addition to covering the research methods used to conduct the study, Chapter Three goes into great length about the research design, the study area, the population, the sampling process, the data collection instruments, the data collection technique, and the data processing and analysis.

The study's findings are presented and discussed in Chapter 4. A summary, conclusions, and suggestions round up Chapter Five. This organisation allows for a systematic examination of the research problem, leading to a well-rounded understanding of the relationship between organisational identification, organisational environmental citizenship

behaviour, the role of employee green creativity, and sustainable leadership among the mining staff of Gold Fields Ghana.

Chapter Summary

This chapter introduced the study by outlining the background to the research and highlighting the environmental sustainability challenges facing the mining sector, particularly within the Ghanaian context. It outlined the problem statement, the study's goal, and the particular research goals and hypotheses that will direct the inquiry. The chapter also defined the key concepts used in the study and explained their relevance to understanding organisational environmental citizenship behaviour.

It also included an outline of the thesis's structure and explained the extent and importance of the study. The chapter established the conceptual and contextual foundation for examining the relationships among organisational identification, employee green creativity, sustainable leadership, and environmental citizenship behaviour. The next chapter reviews the relevant theoretical and empirical literature underpinning the study.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter offers an overview of the research on the variables being studied, which are organisational identification, organisational environmental citizenship behaviour, employee green creativity, and sustainable leadership. It contains the study's theoretical review as well as relevant literature related to the study. The review's goal was to dig deeper into the concepts under consideration and see how they linked to the current study, as well as to find any gaps that the study would solve. Scholarly journals, periodicals, textbooks, and corporation records were all used to gather information. The literature review was organised around the study's objectives.

Theoretical Framework

The study adopts an integrated theoretical framework that combines social identity theory, the componential theory of creativity, and transformational leadership theory to examine how organisational identification, employee green creativity, and leadership influence organisational environmental citizenship behaviour (OECB). This integrated framework helps in understanding the complex interactions among individual, organisational, and leadership factors in fostering sustainable environmental behaviours in the mining sector (Bass, 1999; Kark & Shamir, 2002).

Social Identity Theory

Social Identity Theory (SIT), developed by Tajfel and Turner (1979), explains how individuals derive part of their self-concept from their membership in social groups, including organisations. The theory suggests that

employees define themselves not only through personal characteristics but also through their affiliation with organisational values, goals, and norms (Haslam et al., 2009). Employees are more likely to match their attitudes and behaviours with the goals of their organization when they have a strong sense of identification with it (Dutton et al., 1994; Mael & Ashforth, 1992). In organisational contexts, this psychological attachment encourages employees to act in ways that protect and enhance the organisation's image and performance (Ashforth & Mael, 1989). Within environmentally sensitive sectors such as mining, this identification may motivate employees to support sustainability initiatives and adopt behaviours that reflect organisational environmental priorities.

SIT further suggests that employees who perceive their organisation's values as congruent with their own develop a sense of belonging and shared responsibility for organisational outcomes (Tajfel & Turner, 1979). This sense of identification can extend to organisational environmental citizenship behaviour (OECB), which involves voluntary actions that promote environmental sustainability beyond formal job requirements (Williams & Barrett, 2017). Employees who internalise organisational sustainability values may therefore engage in behaviours such as conserving resources, supporting green initiatives, and encouraging environmentally responsible practices among colleagues (Choi & Rainey, 2014). In this way, SIT provides a useful framework for understanding how organisational identification can influence pro-environmental behaviour by shaping employees' motivations and sense of collective responsibility (Ellemers, 2012).

The theory also highlights the role of organisational context in strengthening or weakening identification. Leadership, organisational culture, and institutional support can reinforce a shared identity and encourage employees to embody organisational values in their behaviour (Gooty et al., 2009). Where sustainability is embedded within the organisational identity, employees may be more inclined to integrate environmental responsibility into their daily work practices.

However, identification alone may not always translate into environmental action if supportive structures, leadership commitment, or innovative capacity are lacking (Kark & Shamir, 2002). Consequently, while social identity theory explains how organisational identification can stimulate environmental citizenship behaviour, it must be complemented by perspectives that account for creativity and leadership influences, thereby providing a foundation for integrating the Componential Theory of Creativity and Transformational Leadership Theory in this study.

Componential Theory of Creativity

The Componential Theory of Creativity, proposed by Amabile (1983), explains that creativity results from the interaction of three key elements: domain-relevant expertise, creative-thinking skills, and intrinsic motivation. Rather than viewing creativity as an individual trait alone, The approach highlights how the organisational environment shapes innovative results (Amabile, 1983; Oldham & Cummings, 1996). Within organisational settings, employees are more likely to produce creative ideas when they possess the necessary knowledge, are encouraged to think flexibly, and are internally motivated to contribute meaningfully to their work. In environmentally

sensitive sectors such as mining, these components are particularly relevant, as organisations increasingly rely on employee innovation to address sustainability challenges and improve environmental practices (Zhou & Shalley, 2003).

The theory further highlights that organisational conditions are important in enabling creativity. Supportive leadership, access to resources, open communication, and a culture that encourages experimentation can strengthen employees' intrinsic motivation and willingness to generate innovative solutions (Gagné & Deci, 2005; Hennessey & Amabile, 2010). In the context of green creativity, workers who experience organisational support are more likely to propose environmentally responsible ideas, such as improved waste management practices, energy-efficient processes, or environmentally friendly technologies. This suggests that creativity is not solely dependent on individual capability but is also shaped by organisational structures and leadership behaviours that either facilitate or constrain innovative thinking (West, 2002).

In relation to this study, the Componential Theory of Creativity offers an advantageous structure for comprehending how employee green creativity emerges and contributes to organisational environmental outcomes. Where employees possess relevant knowledge, feel motivated to contribute, and operate within a supportive environment, they are more inclined to come up with and carry out idea that enhance environmental sustainability. Conversely, limited organisational support or restrictive work climates may hinder creative engagement. The theory therefore helps explain how employee green creativity can function as a mechanism through which organisational identification translates into organisational environmental citizenship behaviour, thereby

complementing social identity theory and reinforcing the need to consider leadership influences within the conceptual framework.

Transformational Leadership Theory

Transformational Leadership Theory, developed by Bass (1985) describes how leaders motivate subordinates to put aside their own interests and strive for common organisational objectives. Idealised influence, intellectual stimulation, inspiring drive, and personalised attention are the four main leadership behaviours highlighted by the theory (Bass & Avolio, 1994). Through these behaviours, leaders shape employees' attitudes, commitment, and engagement, thereby encouraging them to adopt behaviours that support organisational priorities (Judge & Piccolo, 2004). In sectors such as mining, where environmental sustainability requires coordinated effort and behavioural change, transformational leadership provides an important framework for understanding how leaders can impact workers' adherence to ecologically friendly methods (Eisenbeiss, 2012).

Transformational leaders articulate a clear vision, act as role models, and foster a supportive climate that motivates employees to contribute meaningfully to organisational objectives (Northouse, 2018). By embedding sustainability within the organisational mission and communicating its importance, leaders can strengthen employees' sense of responsibility for environmental outcomes. Intellectual stimulation fosters critical thinking in workers and generate innovative solutions, while individualised consideration ensures that employees receive the support needed to participate in environmental initiatives (Barling et al., 2010; Bass & Riggio, 2006). In this way, transformational leadership can promote green creativity, reinforce organisational values, and cultivate a culture

in which environmentally responsible behaviour becomes a shared organisational priority.

In the framework of this research, transformational leadership theory helps explain how leadership can shape employees' motivation, creativity, and behavioural engagement in sustainability practices. Leaders who emphasise long-term organisational success and environmental stewardship may strengthen employees' identification with organisational values and encourage them to adopt voluntary pro-environmental behaviours. Conversely, weak leadership support may limit employees' willingness to contribute innovative environmental solutions. The theory, so offers a theoretical foundation for comprehending how sustainable leadership may influence the relationship between organisational identification, employee green creativity, and organisational environmental citizenship behaviour, thereby complementing Social Identity Theory and the Componential Theory of Creativity within the study's framework.

Conceptual Review

This section summarises the study's main ideas of organisational environmental citizenship behaviour, focusing on how employee green creativity, organisational identification, and sustainable leadership collectively influence the pro-environmental practices within organisations, specifically in the mining sector at Gold Fields Ghana.

Organisational Environmental Citizenship Behaviour (OECB)

'Organisational environmental citizenship behaviour' refers to voluntary employee actions that support environmental sustainability within the workplace but are not formally required by job descriptions. These behaviours

include initiatives such as conserving resources, minimising waste, participating in environmental programmes, and encouraging environmentally responsible practices among colleagues. Recent studies emphasise that OECB represents a behavioural extension of organisational sustainability, as it reflects employees' willingness to contribute beyond compliance requirements to enhance environmental performance (Boiral et al., 2018; Paillé et al., 2020). In environmentally sensitive sectors such as mining, OECB is particularly important because many sustainability outcomes depend on everyday employee practices rather than formal policies alone.

Recent literature further suggests that OECB is shaped by both individual and organisational influences. Employees' environmental values, organisational culture, and perceived organisational support for sustainability have been shown to significantly influence the likelihood of engaging in environmentally responsible behaviour (Kim et al., 2019; Luu, 2021). Businesses that incorporate sustainability into their core principles, communication, and management practices tend to create stronger employee commitment to environmental responsibility. Leadership support, employee engagement, and opportunities for participation in sustainability initiatives also enhance the development of OECB by reinforcing employees' sense of responsibility towards environmental outcomes (Aboramadan, 2020; Paillé et al., 2022).

In the context of this study, OECB represents an important behavioural outcome through which organisations can achieve sustainability goals. For mining companies operating under increasing environmental scrutiny, fostering OECB can help reduce ecological risks, strengthen corporate legitimacy, and

improve relationships with stakeholders. Recent research highlights that psychological attachment to the organisation, leadership commitment to sustainability, and employee innovation capacity all contribute to stronger environmental citizenship behaviours (Luu, 2021; Aboramadan et al., 2022). Therefore, it is crucial for businesses to comprehend how these components interact, such as Gold Fields Ghana, where employee-driven sustainability practices are important in improving long-term environmental performance.

Organisational Identification

Organisational identification describes the extent to which employees perceive a sense of belonging to their organisation and integrate its values, goals, and mission into their self-concept. Recent studies emphasise that organisational identification shapes how employees interpret organisational priorities and influence their willingness to contribute beyond formal role expectations (Riketta, 2018; Lee et al., 2021). Employees who closely identify with their organization are more likely to exhibit higher levels of involvement and responsibility, as well as to align their behaviour with organisational objectives. In sustainability-orientated contexts, such identification can encourage employees to support environmental initiatives because organisational success becomes closely linked to their own sense of purpose and professional identity.

Recent literature also indicates that organisational identification is important in promoting environmentally responsible behaviour at work. Workers who believe that their ideals and organisational sustainability goals tend to show greater commitment to environmental practices such as resource conservation, participation in green initiatives, and support for environmentally

friendly innovations (Luu, 2021; He et al., 2019). This occurs because identification strengthens employees' sense of ownership and responsibility towards organisational outcomes. Consequently, organisational identification is increasingly recognised as an important psychological mechanism through which organisations can encourage voluntary sustainability behaviour, including organisational environmental citizenship behaviour (OECB).

In industries with high environmental impact, such as mining, organisational identification may be particularly important for embedding sustainability within everyday work practices. Where sustainability is integrated into organisational values and communication, workers who closely identify with the organisation are more likely to internalise these priorities and reflect them in their behaviour.

Recent studies show that supportive leadership, transparent communication, and opportunities for participation in sustainability initiatives can strengthen organisational identification and enhance participation of employees in environmental practices (Aboramadan et al., 2022; Kim et al., 2023). In this way, organisational identification provides an important conceptual foundation for understanding how employees' psychological attachment to their organisation can influence environmental citizenship behaviour within firms such as Gold Fields Ghana.

Green Creativity

The term "green creativity" describes an employee's capacity to come up with original, practical, and beneficial ideas for enhancing environmental sustainability within the company. Recent research highlights that green creativity involves developing innovative approaches to reduce waste, conserve

resources, and improve environmentally responsible practices in the workplace (Chen & Chang, 2019; Luu, 2021). As sustainability pressures increase across industries, organisations increasingly rely on employee-driven innovation to improve environmental performance and operational efficiency. In environmentally sensitive sectors such as mining, green creativity is important in enabling firms to respond to environmental challenges while maintaining productivity. Employees who contribute innovative environmental ideas therefore support both organisational sustainability objectives and long-term competitiveness.

Recent literature suggests that green creativity is strongly shaped by organisational conditions rather than individual capability alone. Supportive leadership, access to resources, opportunities for participation, and a work climate that encourages experimentation all enhance employees' willingness to propose environmentally innovative ideas (Aboramadan et al., 2022; Kim et al., 2019).

Employees who feel psychologically supported by their organisation and perceive sustainability as a valued organisational priority are more inclined to solve environmental problems creatively. In addition, collaboration, knowledge sharing, and organisational learning processes help employees translate environmental awareness into practical innovations that improve workplace sustainability outcomes. These organisational factors, therefore, are important in enabling green creativity to emerge and be implemented effectively (Aboramadan et al., 2022; Kim et al., 2019).

In the parameters of this investigation, green creativity represents an important behavioural mechanism linking organisational identification to

environmental outcomes. Employees who strongly identify with their organisation may be more motivated to contribute innovative ideas that support organisational sustainability goals. At the same time, leadership commitment to sustainability can reinforce employees' motivation and provide the structural support needed to implement creative environmental solutions (Aboramadan et al., 2022; Kim et al., 2019).

Recent studies confirm that businesses that successfully combine employee identification, leadership support, and innovation-orientated cultures tend to demonstrate stronger environmental citizenship behaviour and improved sustainability performance (Luu, 2021; Aboramadan et al., 2022). Green creativity therefore serves as a critical pathway through which psychological attachment to the organisation can translate into practical environmental actions within firms such as Gold Fields Ghana.

Sustainable Leadership

The concept of "sustainable leadership" describes leadership techniques that put long-term organisational success first while striking a balance between financial performance, social responsibility, and environmental responsibility. Recent scholarship describes sustainable leadership as an approach that integrates ethical decision-making, stakeholder orientation, and environmental stewardship into organisational strategy and daily operations (Avery & Bergsteiner, 2021; Maak et al., 2022). Leaders adopting this approach promote sustainability not only through formal policies but also by embedding environmental values into organisational culture and decision-making processes.

In sectors such as mining, where environmental risks and stakeholder expectations are high, sustainable leadership is increasingly viewed as essential for guiding organisational behaviour towards responsible and sustainable operations. Recent studies indicate that sustainable leadership significantly influences employee attitudes and behaviour by signalling organisational commitment to sustainability. Leaders who communicate clear environmental priorities, provide resources for sustainability initiatives, and recognise employee contributions create conditions that encourage participation in environmentally responsible practices (Aboramadan et al., 2022; Kim et al., 2023).

Such leadership behaviours help employees perceive sustainability as an organisational priority rather than an optional activity. Because of this, employees may be more willing to engage in voluntary pro-environmental actions, collaborate on sustainability initiatives, and support environmentally innovative solutions. In this sense, sustainable leadership contributes to the development of organisational environmental citizenship behaviour (OECB) by shaping both organisational environment and workers motivation. Within the context of this study, sustainable leadership provides an important explanatory mechanism for understanding how organisational factors influence environmental outcomes. Leaders who emphasise sustainability may strengthen employees' identification with organisational values and encourage them to translate this attachment into practical environmental actions.

At the same time, supportive leadership can foster employee green creativity by creating an environment that values innovation and problem-solving related to environmental challenges. Recent research suggests that

organisations that combine strong leadership commitment with employee engagement mechanisms demonstrate higher levels of environmental performance and citizenship behaviour (Luu, 2021; Aboramadan et al., 2022). Sustainable leadership therefore serves as a key contextual factor that may shape how organisational identification and employee creativity translate into environmental citizenship behaviour within firms such as Gold Fields Ghana.

Affective Commitment

The notion of "affective commitment" describes the emotional bond that workers form with their company, which is demonstrated by their willingness to stick around, sense of belonging, and identification with the organization's values. Recent research emphasises that affective commitment strengthens employees' psychological connection to their workplace and influences their attitudes, motivation, and behavioural engagement (Ribeiro et al., 2018; Miao et al., 2020). Employees who feel emotionally attached to their organisation are more likely to internalise organisational goals and demonstrate higher levels of discretionary effort. In organisational settings, this emotional bond often translates into stronger work engagement, cooperation, and voluntary behaviours that contribute to organisational effectiveness.

Recent studies further indicate that affective commitment is important in shaping pro-social and pro-environmental workplace behaviours. Workers who have an intense emotional connection with their company tend to demonstrate stronger organisational citizenship behaviours, including participation in sustainability initiatives and support for environmentally responsible practices (Luu, 2021; Aboramadan et al., 2022). This occurs because emotionally committed employees are more inclined to protect the

organisation's reputation and contribute to its long-term success. In environmentally sensitive industries such as mining, affective commitment can therefore reinforce employees' willingness to engage in sustainability-oriented actions and support organisational environmental goals.

In this review, affective commitment is included as a control variable because it may influence employee behaviour independently of the main explanatory variables. Employees with strong affective commitment may naturally exhibit higher levels of environmental citizenship behaviour, regardless of their level of organisational identification, creativity, or leadership perceptions. Controlling for affective commitment therefore helps isolate the unique effects of organisational identification, employee green creativity, and sustainable leadership on organisational environmental citizenship behaviour. This approach strengthens the study's resilience findings and ensures that the relationships observed among the key constructs are not confounded by underlying emotional attachment to the organisation.

The State of Ghana's Mining Sector

The mining sector remains one of the most important pillars of Ghana's economy, contributing substantially to export earnings, government revenue, and employment. Recent studies confirm that gold mining dominates the sector, with Ghana consistently ranked among the world's leading gold producers (Hilson, 2021; Boadi et al., 2022). Alongside large-scale multinational operations, the industry also includes a significant small-scale and artisanal mining segment, which provides livelihoods for many communities but often poses regulatory and environmental challenges. The sector's economic

significance has therefore been accompanied by growing scrutiny regarding its environmental impact, governance practices, and sustainability performance.

Recent literature highlights that environmental degradation remains one of the most pressing challenges confronting Ghana's mining industry. Studies document persistent issues such as water pollution, land degradation, deforestation, and conflicts between mining firms and host communities (Amankwah-Amoah & Sarpong, 2021; Hilson, 2021). In response, both government institutions and mining firms have increasingly emphasised sustainability frameworks, responsible mining practices, and community engagement strategies aimed at improving environmental and social outcomes. However, research suggests that while policy reforms and corporate sustainability commitments have expanded, implementation gaps remain, particularly at the operational level where employee practices significantly influence environmental outcomes (Boadi & Kuitunen, 2022).

In this context, the behaviour of employees within mining organisations has become increasingly important for achieving sustainability goals. Recent studies indicate that organisational culture, leadership practices, and employee engagement mechanisms are important in shaping environmental performance in resource-intensive sectors (Aboramadan et al., 2022; Luu, 2021). For mining companies operating in Ghana, improving environmental performance therefore requires not only regulatory compliance and technological investment but also stronger employee participation in sustainability initiatives. Gaining insight into the psychological and organisational drivers of such behaviour is particularly relevant for firms such as Gold Fields Ghana, where employee actions can

significantly influence environmental stewardship and long-term sustainability outcomes.

OEGB in the Ghanaian Mining Sector

Organisational environmental citizenship behaviour in the Ghanaian mining sector has become an increasingly important area of focus as companies face growing pressure to adopt sustainable practices. OEGB refers to voluntary actions undertaken by employees that extend beyond formal job responsibilities in support of environmental objectives, including waste reduction, energy conservation, and the promotion of environmentally responsible practices (Dutton, Dukerich, & Harquail, 1994). Within Ghana's mining industry, such behaviours are particularly significant given the environmental challenges associated with mining activities, including water contamination, deforestation, and land degradation (Amankwah, 2017). According to Dutton, Dukerich, and Harquail (1994), OEGB refers to voluntary acts made by employees that go beyond their official job tasks in support of environmental goals, such as waste reduction, energy saving, and the promotion of environmentally responsible behaviours.

Mining companies in Ghana are gradually recognising the importance of employee-driven environmental initiatives in reducing the ecological impact of their operations. While government interventions aimed at addressing environmental damage from mining have intensified, organisational-level strategies remain essential for achieving sustainable outcomes. Firms such as Gold Fields Ghana have increasingly integrated sustainability considerations into their operational practices and encouraged employees to participate in environmental preservation initiatives beyond compliance requirements. These

efforts not only support organisational sustainability objectives but also strengthen corporate legitimacy, as environmental performance has become closely linked to reputation, stakeholder trust, and long-term operational stability.

Leadership is important in fostering OECEB within mining organisations. Increasingly, companies in the Ghanaian mining sector recognise that environmental responsibility cannot be confined to specialised departments but must be embedded within organisational culture and everyday work practices. Leadership strategies that prioritise ethical responsibility, long-term thinking, and environmental stewardship can motivate employees to adopt pro-environmental behaviours and actively support sustainability initiatives. When organisational leaders demonstrate a clear dedication to environmental goals, employees are more likely to internalise these priorities and translate them into voluntary environmentally responsible actions within the workplace.

Looking ahead, the potential for OECEB to contribute to environmental improvement in Ghana's mining sector remains substantial. As sustainability expectations continue to intensify, aligning organisational strategies with environmental values will become increasingly necessary. By fostering a culture that encourages voluntary environmental responsibility among employees, mining organisations can move beyond regulatory compliance towards more proactive sustainability performance. Such developments are likely to be important in determining the destiny of the sector, supporting both economic development and environmental protection in Ghana.

Empirical Review

An empirical review of the mining sector, specifically focusing on Organisational Environmental Citizenship Behaviour (OECB), sustainable practices, and corporate responses in Ghana, reveals important findings that align with global trends in sustainable mining and corporate environmental responsibility.

Organisational Identification and OECB

Empirical research increasingly shows that organisational identification is important in encouraging employees to engage in environmentally responsible behaviour within organisations. Drawing on Social Identity Theory, recent studies suggest that when workers feel a strong alignment between their values and those of the organisation, they are more likely to internalise organisational priorities and act in ways that support them. This psychological attachment strengthens employees' sense of responsibility and intrinsic motivation, thereby encouraging discretionary behaviours that extend beyond formal job roles.

In sustainability-orientated contexts, such identification has been found to promote voluntary environmental actions such as conserving resources, supporting green initiatives, and encouraging environmentally responsible practices among colleagues. These findings indicate that organisational identification provides an important motivational basis for organisational environmental citizenship behaviour, particularly in industries where environmental performance depends on everyday employee practices. Recent empirical studies provide further support for this relationship across different sectors and contexts.

He et al. (2019), using survey data from manufacturing firms and analysing the results with structural equation modelling, discovered that workers were much more willing to take part in volunteer environmental efforts if they had a strong sense of identity with their businesses. Further supporting this link, Testa et al. (2020) conducted research in the hospitality sector in Italy, utilising a mixed-method approach with surveys and in-depth interviews with 380 hotel employees. Their study employed multiple regression analysis to establish that employees who aligned their identity with their organisation's sustainability mission exhibited heightened environmentally friendly behaviours, such as reducing waste and conserving energy. Here, pro-environmental values and shared sustainability goals acted as mediators, showing how personal values aligned with organisational identity translate into action.

Similarly, in the mining industry, Agyemang and Ansah (2023) examined small-scale mining sites in Ghana, using a cross-sectional survey of 310 employees. They applied partial least squares structural equation modelling (PLS-SEM) to reveal that employees who identified passionately in favour of their organisation were more inclined to practise responsible environmental behaviours, such as adhering to environmental protocols and engaging in water conservation efforts. In this context, organisational culture and perceived environmental norms emerged as contextual factors reinforcing OECB among highly identified employees.

These results emphasise the significance of organisational identification in fostering OECB, supporting H1, which states that organisational identification significantly and positively influences OECB. Hence,

H1: Organisational identification has a significant positive effect on organisational environmental citizenship behaviour.

Organisational Identification and Employee Green Creativity

Recent empirical research increasingly recognises organisational identification as an important psychological driver of employee green creativity. Studies suggest that when employees perceive a strong alignment between their personal values and organisational goals, they are more likely to develop innovative solutions that support environmental sustainability. This occurs because identification strengthens employees' internal drive, sense of accountability, and readiness to go above and beyond the call of duty. As a result, workers who have a strong sense of belonging to their company tend to engage more actively in creative environmental problem-solving, including proposing new sustainable processes, improving resource efficiency, and supporting eco-friendly innovations. These findings indicate that organisational identification can provide a strong motivational foundation for environmentally oriented creativity within organisations.

Recent empirical studies provide support for this relationship across different industries. Luu (2020), using survey data from service-sector employees and analysing it with structural equation modelling, found that organisational identification significantly predicted employee green creativity, particularly where organisational sustainability values were clearly communicated. Similarly, Kim et al. (2019), studying manufacturing firms, reported that workers who felt deeply a part of their company were more likely to generate innovative environmental ideas, especially when organisational culture reinforced sustainability goals.

In a study examining sustainability-oriented organisations, Aboramadan et al. (2022) also found that organisational identification favourably impacted employees' creativity in environmental initiatives, with supportive leadership and organisational climate strengthening this effect. These findings collectively suggest that organisational identification is important in stimulating employee green creativity by fostering motivation, value alignment, and engagement with organisational sustainability objectives. Accordingly, this study proposes that employees who strongly identify with their organisation are more likely to generate innovative environmental ideas within the workplace.

H2: Organisational identification has a significant positive effect on employee green creativity.

Employee Green Creativity and OECEB

Employee green creativity is increasingly recognised as an important predictor of organisational environmental citizenship behaviour, as it reflects the capacity of workers to come up with creative solutions that enhance environmental sustainability at work. Employees who engage in creative environmental problem-solving often demonstrate stronger intrinsic motivation to implement solutions that extend beyond their formal job responsibilities. Where organisations support innovation and communicate clear environmental priorities, creative workers are more inclined to interpret their ideas into voluntary sustainability practices such as reducing waste, improving resource efficiency, and supporting environmentally responsible initiatives. This suggests that green creativity not only contributes to organisational innovation but also encourages discretionary environmental behaviours that align with organisational sustainability goals.

Recent empirical research supports this relationship across different organisational settings. Kim et al. (2019), using survey data analysed through structural equation modelling, found that employee green creativity significantly predicted voluntary environmental behaviours in manufacturing organisations. Similarly, Luu (2020), applying a multi-wave research design, reported that employees who generated environmentally innovative ideas were more likely to participate actively in organisational environmental initiatives. In a study examining sustainability-orientated organisations, Aboramadan et al. (2022) also found that green creativity positively influenced employees' environmental citizenship behaviour, particularly where organisational climate encouraged innovation and participation. These findings consistently indicate that creative environmental thinking often translates into practical voluntary environmental actions within organisations.

When considered together, the empirical data indicates that workers with greater levels of green creativity are more likely to act in an ecologically conscious manner outside of their official job duties. Accordingly, this study proposes that employee green creativity will positively influence organisational environmental citizenship behaviour in the Ghanaian mining sector.

H3: Employee green creativity has a significant positive effect on organisational environmental citizenship behaviour.

Employee Green Creativity Mediates the Relationship Between Organisational Identification and OECEB

It is becoming more widely acknowledged that employee green creativity is a crucial process via which organisational identity results in environmental citizenship behaviour. Employees are more likely to internalise

their organisation's sustainability goals and feel inspired to contribute to them when they have a strong sense of identification with it. However, this psychological attachment does not always result directly in behavioural change; rather, it often stimulates creative engagement with environmental challenges. Employees who feel connected to organisational values tend to generate innovative solutions that support sustainability objectives, such as improving resource efficiency, reducing environmental risks, or proposing new environmentally responsible practices. In this sense, green creativity functions as an important behavioural pathway that converts identification into concrete sustainability actions within the organisation.

Recent empirical evidence supports this mediating role across different organisational contexts. Luu (2021), using structural equation modelling in a multi-wave study, found that organisational identification positively influenced employees' environmental behaviour indirectly through green creativity. Similarly, Aboramadan et al. (2022), examining sustainability-orientated organisations, reported staff members who felt psychologically connected to their organisation were more likely to develop innovative environmental ideas, which subsequently increased their participation in voluntary environmental initiatives.

In another study, Kim et al. (2019) proved that green creativity significantly mediated the relationship between organisational factors and environmental citizenship behaviour, indicating that innovation-related engagement is important in translating organisational attachment into action. These findings consistently highlight green creativity as an important explanatory mechanism linking organisational identification to environmental

behaviour. Taken together, the literature suggests that organisational identification alone may not be sufficient to generate consistent environmental citizenship behaviour unless it stimulates employees' innovative engagement with sustainability challenges. Thus, this analysis suggests that employee green creativity will act as an intervening mechanism through which organisational identification influences organisational environmental citizenship behaviour in the Ghanaian mining sector.

H4: Employee green creativity significantly mediates the relationship between organisational identification and organisational environmental citizenship behaviour.

Sustainable Leadership Moderates the Relationship Between Organisational Identification and OECEB

Employees' psychological attachment to the company does not determine the association between organisational identity and environmental citizenship behaviour. It is also shaped by the leadership context within which employees operate. Sustainable leadership, which emphasises long-term environmental responsibility, ethical decision-making, and stakeholder-orientated management, can strengthen the extent to which employees translate organisational attachment into environmentally responsible behaviour.

When leaders consistently communicate sustainability priorities, allocate resources to environmental initiatives, and model responsible practices, they reinforce the values employees internalise through organisational identification. In such contexts, workers are more likely to experience help in acting on their environmental beliefs, thereby increasing the likelihood that identification will result in voluntary pro-environmental behaviour. Sustainable

leadership therefore functions as a contextual mechanism that enhances the behavioural expression of organisational identification.

Recent empirical studies support this moderating role of leadership. Zhao et al. (2018), using structural equation modelling in manufacturing organisations, found that leadership support for sustainability significantly strengthened the connection between workers' attachment to their organisations and their participation in environmental initiatives. Similarly, Luu (2021), applying a multi-wave research design, reported that sustainability-orientated leadership amplified the influence of organisational identification on employees' voluntary environmental behaviour by reinforcing environmental norms and expectations.

In another study, Aboramadan et al. (2022) demonstrated that leadership practices promoting sustainability values increased the likelihood suggested workers who felt a strong sense of belonging to their company would actively practice environmental citizenship. These findings collectively indicate that leadership provides the situational cues and support that determine whether organisational identification is translated into action. Taken together, the literature suggests that sustainable leadership is important in strengthening the impact of organisational identification on environmental citizenship behaviour. Accordingly, this study proposes that the association between organisational identification and organisational environmental citizenship behaviour will be stronger where sustainable leadership practices are more evident within the organisation.

H5: Sustainable leadership significantly moderates the relationship between organisational identification and organisational environmental citizenship behaviour.

Conceptual Framework

The conceptual framework explores the relationships among organisational identification, organisational environmental citizenship behaviour, employee green creativity, and sustainable leadership among mining staff at Gold Fields Ghana. Organisational identification is hypothesised to directly and favourably impact OECB, with employee green creativity acting as a mediator that enhances this relationship. Sustainable leadership moderates these interactions by strengthening the effects of both organisational identification and green creativity on OECB.

Additionally, affective commitment, as a control variable, influences these relationships by reflecting employees' emotional attachment and involvement in their organisation. This framework highlights how employees' alignment with organisational values, their ability to generate innovative environmental solutions, and the influence of sustainability-focused leadership collectively foster voluntary pro-environmental behaviours within the mining sector.

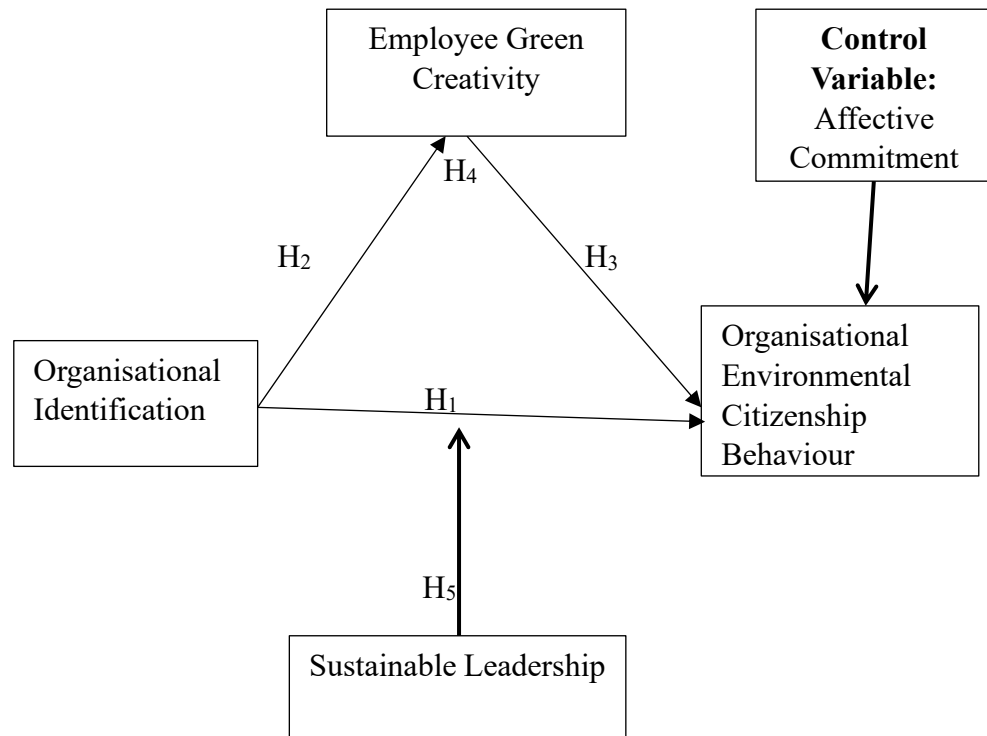


Figure 1: Conceptual Framework

Source: Researcher's Construction (2025)

Chapter Summary

This chapter reviewed the theoretical, conceptual, and empirical literature underpinning the study. It examined key constructs including organisational identification, organisational environmental citizenship behaviour, employee green creativity, sustainable leadership, and affective commitment, drawing on Social Identity Theory, the Componential Theory of Creativity, and Transformational Leadership Theory to explain their relationships. The conceptual and empirical discussions highlighted how psychological attachment, leadership context, and employee innovation interact to influence pro-environmental behaviour within organisations. The review also identified gaps in existing research, particularly the limited empirical evidence on these relationships within the Ghanaian mining sector. The chapter therefore

culminated in the advancement of a conceptual framework to guide the study and inform the methodological approach adopted in the next chapter.

CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter presents the methodology utilised in the study. It discusses the research design, paradigm, approach, study area, population, sampling procedures, data collection instruments, and processes. It also addresses the accuracy and consistency of the data gathering tools, common-method bias, ethical considerations, data analysis procedures, and variable measurement.

Research Design

The systematic plan that directs the collection, measurement, and analysis of data in a study is known as research design (Sekaran & Bougie, 2016). It outlines the procedures used to move from research questions and hypotheses to empirical conclusions. Scholars commonly identify exploratory, descriptive, and causal research designs, each suited to different research purposes (Sekaran & Bougie, 2016; Saunders & Lewis, 2016). Exploratory design is suitable in situations where there is little prior understanding about an occurrence, whereas causal or explanatory design is used when the aim is to examine relationships among variables and explain underlying mechanisms.

In line with this orientation, the present study adopts an explanatory research design. This approach is suitable since the study seeks to examine and explain the connections between organisational identification, employee green creativity, sustainable leadership, and organisational environmental citizenship behaviour. It allows the researcher to test hypothesised links, including mediating and moderating effects, and to provide empirical explanations of how

these variables interact within the organisational context (Yin, 2014; Saunders & Lewis, 2016).

Research Paradigm

According to Guba and Lincoln (1982), a research paradigm is the conceptual underpinning that directs the creation, interpretation, and validation of information within an investigation. It forms assumptions about reality, the nature of knowledge, and appropriate research methods. Common approaches in research in social sciences include positivism, interpretivism, and post-positivism (Saunders & Lewis, 2017; Žukauskas et al., 2018). The post-positivist paradigm emerged as a refinement of positivism, recognising that although an objective reality exists, it can only be understood imperfectly due to contextual influences, measurement limitations, and researcher bias (Ryan, 2018). Unlike strict positivism, post-positivism accepts that findings are probabilistic rather than absolute and that knowledge develops through continuous testing and refinement (Phillips & Burbules, 2000). This perspective is particularly relevant for organisational research, where human behaviour is influenced by multiple contextual and psychological factors.

In line with these assumptions, this investigation is based on the post-positivist paradigm because it aims to examine measurable relationships among organisational identification, employee green creativity, sustainable leadership, and organisational environmental citizenship behaviour while recognising the complexity of organisational contexts. The paradigm supports the use of quantitative techniques to test hypothesised relationships and assess mediation and moderation effects, while also allowing for cautious interpretation of results in light of contextual influences (Creswell, 2014; Ragab & Arisha, 2018).

Through adopting this philosophical stance, the study is able to generate empirically grounded but critically interpreted findings, thereby providing a rigorous basis for understanding environmental behaviour within the Ghanaian mining sector.

Research Approach

A quantitative methodology was employed in the investigation. Objective and quantifiable, quantitative research typically emphasises precision in gathering and analysing data (Bryman & Bell, 2007). The choice of the quantitative approach is justified by Amin, (2005) in that it provides in-depth explanations of organisational identification and organisational environmental citizenship behaviour together with the role of affective commitment, employee green creativity, and sustainable leadership in the form of the data needed to meet the required objectives of the study using analytical techniques, such as correlation and regression analyses. organisational identification, organisational environmental citizenship behaviour, employee green creativity, and sustainable leadership.

Study Area

This study was conducted at one of the top international mining firms doing business in Ghana is Gold Fields. The company manages two major mining sites located in Tarkwa and Damang in the Western Region of Ghana, both of which are recognised as important centres of large-scale gold mining. These locations were selected because they represent key operational zones where environmental management practices and sustainability initiatives are actively implemented. As a major player in Ghana's mining industry, Gold Fields Ghana provides an appropriate setting for examining organisational

factors that influence environmental behaviour among employees, particularly within a resource-intensive sector facing increasing pressure to improve sustainability performance.

Gold Fields articulates its corporate direction around long-term value creation that extends beyond gold production, integrating financial performance with social responsibility and environmental stewardship. The company aspires to be the preferred global gold mining firm by consistently delivering sustainable and superior value to stakeholders. Its operations are guided by core values—safety, honesty, decency, accountability, creativity, and teamwork—which shape decision-making, governance, and stakeholder engagement practices. These principles are reflected in strategic priorities such as investments in renewable energy solutions, strengthened community development initiatives, rigorous safety standards, and responsible environmental management, thereby aligning corporate objectives with broader sustainability commitments.

The Western Region, where the Tarkwa and Damang mines are situated, is characterised by extensive mineral deposits and long-standing mining activities, making it one of the most significant mining zones in Ghana. The region experiences a tropical climate with seasonal rainfall patterns that can affect mining operations, environmental risk management, and sustainability practices. These contextual features make the study area particularly suitable for investigating how organisational identification, leadership practices, and employee innovation contribute to environmental citizenship behaviour. Focusing on Gold Fields Ghana, therefore, enables the study to generate

context-specific insights into sustainability behaviour within large-scale mining operations in Ghana.

Study Population

The intended audience for this research included all permanent employees of Gold Fields Ghana, including managerial, supervisory, and operational staff. According to the company's 2023 Report, from pages 102 to 107, the workforce in Ghana is stated to be 1,400 employees. These employees were considered appropriate for the study because they are directly actively involved in carrying out the company's operational procedures, sustainability programs, and organisational policies. The workforce was broadly grouped into management and general staff to reflect the organisational structure and roles within the firm. Selecting this population ensured that respondents possessed adequate knowledge and experience of organisational practices, thereby enabling the study to obtain reliable information on organisational identification, employee green creativity, sustainable leadership, affective commitment, and organisational environmental citizenship behaviour within Gold Fields Ghana.

Sample and Sampling Procedure

This inquiry utilised a probability sampling approach to ensure that the selected respondents adequately represented the workforce of Gold Fields Ghana. A simple random sampling technique was chosen because it reduces selection bias and increases the findings' generalisability by giving each member of the population an equal chance of being chosen. The sampling frame was based on the company's employee records, which included staff across managerial, supervisory, and operational levels. Using this approach ensured

that respondents were drawn from different functional areas of the organisation, allowing the study to capture a broad range of views regarding organisational identification, employee green creativity, sustainable leadership, affective commitment, and organisational environmental citizenship behaviour.

To ascertain the suitable sample size, the research relied on Krejcie and Morgan's (1970) sample size determination table. For a population of approximately 1,400 employees, the table recommends a sample size of 302 respondents, which was considered sufficient for statistical analysis and hypothesis testing. The selection process involved assigning identification numbers to employees in the sampling frame and using a random selection method to choose participants. This procedure ensured fairness in selection and helped produce a sample that reflects the diversity of the workforce. The use of this sampling strategy therefore strengthened the dependability of the information gathered and improved the reliability of the study's conclusions.

Data Collection Instrument

The main tool used in the study to gather data was a structured questionnaire. The questionnaire was designed to capture information on the study variables in an orderly and comparable manner, ensuring suitability for quantitative analysis. It consisted entirely of closed-ended items to enhance consistency of responses, facilitate coding, and support statistical analysis. A seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) was used to measure respondents' perceptions, as this scale allows for greater response sensitivity and improves the reliability of attitudinal measurement. The questionnaire also included a short section on demographic characteristics to provide contextual details on the respondents and support descriptive analysis.

The instrument was organised into sections corresponding to the key constructs of the study, namely organisational identification, organisational environmental citizenship behaviour, employee green creativity, sustainable leadership, and affective commitment as a control variable. The measurement items were modified from pre-existing scales in empirical studies to ensure content validity and conceptual alignment with the research objectives. The wording of items was slightly modified to suit the mining sector context while retaining their original meaning. The structured design of the questionnaire therefore ensured that the data collected were suitable for assessing the proposed connections between the study variables and for conducting multivariate analysis using SmartPLS.

Data Collection Procedures

Prior to the data collection exercise, a cover letter from the Department of Management Studies, University of Cape Coast, was presented to the management of Gold Fields Ghana to seek permission to conduct the study. Upon approval, respondents were made aware of the academic purpose of the research and guaranteed that their involvement was optional and that their responses would be treated confidentially. Trained investigators assisted in distributing and retrieving the instruments from specific employees in order to administer questionnaires. The data collection process was carried out during a time of approximately two weeks to allow respondents sufficient time to complete the questionnaire at their convenience.

In line with the determined sample size, a total of 302 questionnaires were distributed to selected employees of Gold Fields Ghana using the approved sampling procedure. At the end of the exercise, all 302 questionnaires were

returned. A total number of 302 completed questionnaires was subsequently used to compute the pace of reaction and determine the adequacy of the data for statistical analysis. This procedure ensured that the study maintained methodological consistency while achieving a satisfactory level of participation from respondents.

Validity and Reliability of Data Collection

The ability of a research instrument to measure the criteria for which it was designed determines its validity and reliability (Sürücü & Maslakçi, 2020). Bolarinwa (2015) asserts that the effectiveness of an investigation tool's measurement of its study objectives determines its validity. Validity was carried out in relation to the study in order to verify and modify the questionnaire's content. Independent and expert evaluations were used to do this, even though a prototype survey questionnaire was first created based on in-depth analyses of relevant literature and given to four peers with research bent. The revised text was then presented to a panel of three academic professionals with relevant expertise in organisational behaviour.

The researcher made sure that all required changes were implemented in accordance with the panel's recommendations. Lastly, the researcher's supervisor received the questionnaire for evaluation. Careful consideration was given to the study's goals, communication plan, likely participants, budget, and time constraints. Likewise, great attention was paid to the item design and layout structure (i.e., wording, ambiguity, sequence, duration, structure, direction, language, etc.), with a focus on well-crafted and pertinent questions. To ensure validity, the questionnaire instrument was first created and then thoroughly evaluated by peers, research experts, and the researcher's supervisor.

To ensure the study tool was reliable, a reliability test (Cronbach's alpha test) was also performed. Dependability, according to Beins and McCarthy (2019), is the degree to which a research instrument yields consistent results when utilised repeatedly in different settings and at different periods. Cronbach's alpha was used to evaluate the internal consistency of the questionnaire items after the study. According to earlier studies (Beins & McCarthy, 2017; Bolarinwa, 2015), a research instrument's dependability rises when its Cronbach alpha value approaches 1. On the other hand, a threshold of 0.7 or higher is often considered suitable.

There was a pre-test to check for reliability. Pretesting a questionnaire can assist in identifying ambiguous and biased question items during situational analysis, claims Ishtiaq (2019). Prior to the actual data collection process, 30 replies obtained from Edikan Mines employees in Asankrangwa, in the western area of Ghana, were used for pretesting in this study. Following that, IBM SPSS Statistics was used to process and analyse the data using its "reliability analysis" method. After that, the score was recorded and compared to the cutoff.

Common-Method Bias

It has been established that data obtained from lone respondents is susceptible to common-method bias (CMB) (MacKenzie & Podsakoff, 2012). It has to do with the potential for measurement errors, which are made worse by respondents' gregariousness and desire to provide a positive response (Chang, Witteloostuijn & Eden, 2010). The variety of replies on the instrument is another name for it (Sharma et al., 2009). Previous studies (Tehseen, Ramayah & Sajilan, 2017; Jakobsen & Jensen, 2015; Rönkkö & Ylitalo, 2011) have

proposed a number of strategies to get around the common-method bias. Using VIF is one of the strategies. VIF scores are used to detect CMB; values more than five indicate the existence of CMB. Thus, these methods were employed in the study to deal with CMB.

Ethical Considerations

Throughout the whole research procedure, ethical guidelines were closely followed to guarantee participant safety and the validity of the study. The University of Cape Coast's Department of Management Studies provided an introductory letter prior to data collection in order to request permission from Gold Fields Ghana's management and to verify the research's legitimacy and academic goal. The study's goals, the nature of their participation, and the planned use of the data gathered were all explained to the participants. Respondents were informed that their involvement in the study was completely voluntary and that they might opt out at any time without suffering any repercussions.

Throughout the study, strong confidentiality and anonymity protocols were followed. All data collected was utilised exclusively for academic purposes, and respondents were not asked for their names or other identifying information. Completed questionnaires were handled securely, and the data were analysed in aggregated form to prevent the identification of individual participants. In line with established ethical research practices, respondents were also assured that their responses would not be disclosed to their employer or any third party. These measures ensured that the study complied with recognised research ethics principles and helped to promote honesty, trust, and accuracy in the responses obtained.

Data processing and analysis

Prior to analysis, data obtained from survey-based research necessitates "editing, sorting, coding, error checking, and mathematical calculations" (Zikmund, Babin, Carr & Griffin, 2003, p. 34). McNabb (2017) contends that editing, sorting, and coding are essential prerequisites for statistical analysis to examine and authenticate issues in raw data. Before coding and sending data for processing to evaluate and correct omissions, consistency, and dependability, data editing and sorting procedures are crucial. To guarantee that every questionnaire is comprehensive and every response is eligible, data editing is also carried out. Each response is categorised and arranged using the coding technique, along with the corresponding numerical symbols and scores.

To guarantee that there are no missing values and that the data to be input is consistent, data cleaning and screening are also carried out (Treiman, 2014). According to Treiman (2014) and Hair, Ringle, and Sarstedt (2011), these methods improve data analysis accuracy while guaranteeing adherence to data analysis methodology assumptions. According to them, sustaining the validity of anomalous responses, means, standard deviations, and values requires confirming data accuracy. According to them, sustaining the validity of anomalous responses, means, standard deviations, and values requires confirming data accuracy.

In the end, data was encoded by assigning numerical values to each statement on the questionnaire, as required in quantitative research. SMART-PLS 4 and IBM SPSS Statistics version 26 were then used to evaluate the data. The data was then assessed using an inferential statistical technique called "Partial Least Squares-Structural Equation Modelling" (PLS-SEM) and

descriptive statistics, such as frequencies and percentages. Frequencies and percentages were used to define the business profiles of the companies and the respondents' demographic characteristics. To assess the investigation's hypotheses, the PLS-SEM was used. The bootstrapping outcomes of the PLS-SEM model and the PLS algorithm were thoroughly investigated. The results of the PLS technique showed multicollinearity, validity (discriminant and convergent), reliability (both indicator and concept), and the applicability of the outer model (Hair et al., 2014). These basic presumptions were satisfied and reviewed before to bootstrapping, which highlighted the test results and was explained.

Variables Measurement

To ensure uniformity and dependability throughout data collection, the study used standardised scales to measure important factors. Organisational identification was determined using a seven-item scale by Edwards and Peccei (2007), while green creativity utilised a five-item scale by Chen and Chang (2013). Sustainable leadership was measured with a nine-item scale developed by McCann and Holt (2010), and OECB (Organisational Environmentally Conscious Behaviour) was reviewed by utilising an eight-item scale adapted from Robertson and Barling (2017). Affective commitment, included as a control variable, was measured using a seven-item scale by Schoemmel, Jønsson, and Jeppesen (2015). All variables were rated on a seven-point Likert scale for uniformity and ease of interpretation.

Chapter Summary

The research approach used for the study was described in this chapter. It described the study area and target demographic after outlining the research

design and philosophical perspective that guided the investigation. The chapter also explained the sampling technique and sample size determination, as well as the procedures used in selecting respondents. The data collection instrument and procedures were described, including how the questionnaire was structured and administered. In addition, ethical considerations observed during the study were highlighted to make sure that participation, confidentiality, and appropriate data management. Overall, the chapter established the methodological foundation for the study and provided the basis for the data analysis and results presented in the next chapter.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

Introduction

The results of the analysis of the information acquired from the questionnaire are presented and discussed in this chapter. The results are arranged and shown in a way that supports the goals of the study. The demographic features are covered first in this section.

Descriptive statistics of the Respondents

An outline of the sociodemographic traits of the 302 study participants is given in this section. These characteristics offer contextual insight into the population under investigation and are essential in understanding how diverse respondent profiles may influence organisational identification, environmental citizenship behaviour, green creativity, sustainable leadership, and affective commitment. The demographic information includes sex, age, level of education, category of staff, and number of years with the company. The results are presented in Table 1.

Table 1: Descriptive Statistics for Socio-Demographic Variables

Variable	Category	Frequency	Percent
Gender	Male	259	85.8%
	Female	43	14.2%
Age	18–28	9	3.0%
	29–39	141	46.7%
	40–50	112	37.1%
	Above 50 years	40	13.2%
Educational Level	First Degree	275	91.1%
	Master’s Degree	24	7.9%
	PhD	3	1.0%
Staff Category	Junior Staff	260	86.1%
	Senior Staff	39	12.9%
	Senior Member	4	1.3%
Years of Service	Less than 5	81	26.8%
	6–10	57	18.9%
	11–20	96	31.8%
	Above 20 years	68	22.5%

Source: Field Data (2025)

From Table 1, the outcomes indicate that out of 302 respondents, 259 were males, representing 85.8%, while 43 were females, accounting for 14.2%. This confirms that the mining sector in the study context is heavily male-dominated, reflecting the typical gender distribution in extractive industries. Such dominance may influence organizational culture, workplace dynamics, and participation in environmental initiatives.

According to the age distribution, most responders (46.7%) fall within the 29–39 years age range, succeeded by 37.1% in the 40–50 years category. Employees above 50 years make up 13.2%, while the youngest group, aged 18–28 years, represents only 3.0%. This pattern suggests that the workforce is predominantly middle-aged, combining both experience and adaptability, which is advantageous for adopting sustainable practices and innovative environmental solutions.

Regarding educational attainment, most respondents (91.1%) hold a first degree, while 7.9% possess a master's degree, and 1.0% have a PhD. This high level of formal education among the workforce implies that employees are likely to understand and participate in sustainability policies, environmental programs, and innovation-driven initiatives within the organization.

In terms of staff category, the majority (86.1%) are junior staff, followed by 12.9% senior staff, and only 1.3% senior members. This distribution highlights that operational-level employees constitute the largest segment of the workforce, which may influence the implementation of environmental citizenship behaviours, as these employees often execute sustainability initiatives on the ground.

With respect to years of service, 31.8% of respondents have worked with the company for 11–20 years, followed by 26.8% with less than five years of service, 22.5% with over 20 years, and 18.9% who have served between 6–10 years. This spread reflects a workforce with a balanced mix of experience, from newer entrants who can bring fresh ideas to long-serving employees with deep institutional knowledge of the company's environmental and operational culture.

Descriptive Statistics of the Variables

The descriptive statistical findings for the primary study variables are shown in this section. The central tendency, dispersion, and distribution of responses for each variable were compiled using SPSS. In particular, after aggregating the corresponding elements for each construct, the minimum, maximum, mean, standard deviation (SD), skewness, and kurtosis were calculated. The findings shed light on respondents' evaluations of the study's major constructs. The statistical summaries are displayed in Table 2.

Table 2: Descriptive Statistics for Study Variables

Study Variable	N	Min	Max	Mean	SD	Skw	Kurt
Organizational Identification	398	1.00	7.00	5.5596	1.22857	-1.378	1.757
Organizational Environmental Citizenship Behaviour	398	1.00	7.00	5.5644	1.18182	-1.460	2.280
Employee Green Creativity	398	1.00	7.00	5.5754	1.28494	-1.347	1.720
Sustainable Leadership	398	1.00	7.00	5.6002	1.25611	-1.391	1.956
Affective Commitment	398	1.00	7.00	5.7929	1.27857	-1.690	2.773

Source: Field Data (2025)

The results presented in Table 2 indicate that all variables were evaluated on a seven-point Likert scale, with observed scores spanning the full range from 1 to 7. The average values for the constructs were all above the midpoint, suggesting generally favourable perceptions among respondents. Organisational Identification recorded a mean score of 5.5596 (SD = 1.22857), indicating that employees tended to feel a strong a feeling of unity and belonging inside their organisation.

Similarly, organisational environmental citizenship behaviour showed a mean of 5.5644 (SD = 1.18182), suggesting that respondents were inclined to engage voluntarily in environmentally responsible actions beyond their formal job roles. Employee Green Creativity also demonstrated a relatively high mean score of 5.5754 (SD = 1.28494), reflecting respondents' agreement that they contribute innovative ideas aimed at improving environmental sustainability within the organisation. Sustainable Leadership recorded a mean value of 5.6002 (SD = 1.25611), indicating that leadership practices within the organisation were generally perceived as supportive of sustainability values and initiatives. Affective commitment produced the highest average score of 5.7929 (SD = 1.27857), suggesting that employees reported strong emotional attachment and loyalty to the organisation.

The distributions of all variables were negatively skewed, implying that the answers were concentrated at the top of the scale, while the kurtosis values indicated moderately peaked distributions. Overall, these descriptive statistics suggest that respondents expressed positive perceptions across all study constructs, providing an appropriate basis for further inferential and structural analyses in the subsequent sections.

Control Variable Operationalisation

Affective commitment is used as a control variable in this study to take into consideration how employees' emotional attachment to and identification with the company affect their participation in pro-environmental actions. The term "affective commitment" describes how much workers feel emotionally connected to, involved in, and loyal toward their organization (Meyer & Allen, 1991). Employee green creativity (EGC) and organisational environmental citizenship behaviour (OECB) may be independently influenced by employees with high affective commitment, who are more willing to go above and beyond the requirements of their official jobs.

To operationalise affective commitment, a validated scale adapted from Meyer and Allen's (1997) Affective Commitment Scale was employed. The construct was evaluated utilising a set of items rated on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Sample items include statements such as "*I feel a strong sense of belonging to my organisation*" and "*I would be very happy to spend the rest of my career with this organisation.*" The inclusion of affective commitment as a control variable helps isolate the unique effects of organisational identification, employee green creativity, and sustainable leadership on organisational environmental citizenship behaviour, thereby enhancing the internal validity of the study.

Evaluation of the Partial Least Squares Structural Equation Modelling (PLS-SEM) Results

According to Purwanto and Sudargini (2021), PLS-SEM is a suitable method for exploratory studies, complex models, formatively measured constructs and variables, and studies that aim to predict constructs. PLS-SEM

results are reported in two stages (Hair, Hult, Ringle, & Sarstedt, 2021). Determining the model (structural and measurement models) is the initial step. Evaluating the models is the second step.

While the structural model, also known as the inner model, shows the relationship between the constructs, the measurement model, also known as the outer model, assesses the relationship between the constructs and the indicators that correspond to them (Hair, Risher, Sarstedt, & Ringle, 2019). When analysing PLS-SEM results, one or more robustness tests must be carried out to verify the stability of the findings; the applicability of these checks depends on the study setting, including its analyses and data availability (Hair, Risher, Sarstedt, & Ringle, 2019).

Model Specification

This section would include specifications for the measurement and structural models. The relationship between the constructs and their indicators is explained by the measurement model, also known as the outer model. Furthermore, the structural model explains the relationship between the study's constructs in accordance with its goals or hypothesis (Hair et al., 2020). Measurement model specification involves defining the relationship between the constructs and the measurements known as the indicators, while the structural model specification provides a description of outlining the relationship between the constructs (Acquah, 2020). The measurement and structural model are shown in Figure 2 below.

Measurement Model Specification

This section would contain specifications for both the measurement and structural models. The connection between the constructs and their indicators is

explained by the measurement model, also known as the outer model. Furthermore, the structural model explains the relationship between the study's constructs in accordance with its goals or hypothesis (Hair et al., 2020). While the structural model specification offers an explanation of describing the relationship between the constructs, the measurement model specification entails defining the relationship between the constructions and the measurements known as the indicators (Acquah, 2020). The measurement and structural model are shown in Figure 2 below.

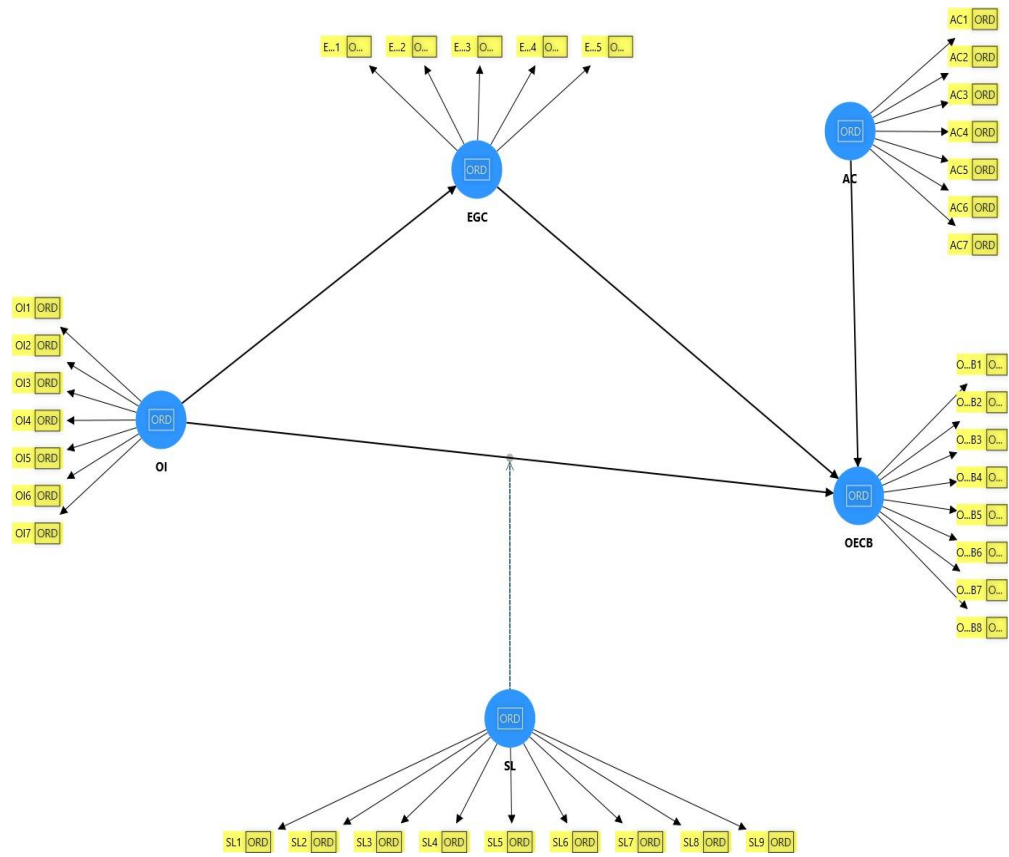


Figure 2: Measurement Specification
 Source: Author’s Construction (2025).

Model Assessment

The subsequent step in evaluating outcomes using PLS-SEM involves the evaluation of the structural and measurement models, respectively (Hair, Howard & Nitzl, 2020). This entails evaluating outcomes to determine the

reliability and validity of the construct measures within the measurement or outer model. This process aids in evaluating the reliability of the outside model and establishes the foundation for examining within the model. Evaluating the inner model involves scrutinising the proposed links that underpin the investigation (Hair et al., 2019).

Evaluation Of The Measurement Model

According to Hair et al. (2020), the measuring model assesses the validity and reliability of the outer model. Construct reliability and internal consistency are used to evaluate reliability, whereas discriminant and convergent validity are used to evaluate validity. Cronbach's alpha (α), indicator loadings, and the construct's composite reliability are used to assess internal consistency reliability and construct reliability, respectively. Factor loadings and the items' average variance extracted (AVE) values are used to measure convergent validity (Hair et al., 2019). The heterotrait-monotrait (HTMT) ratio, Fornell-Larcker criteria, and cross-loadings are used to evaluate discriminant validity.

Evaluating Construct Reliability

According to Saunders et al. (2009), reliability is the consistency of the questionnaire and its ability to yield same or comparable findings in a variety of settings, sample groups, and administration techniques. Indicator loadings are used to evaluate construct reliability; an item is considered dependable if it is greater than 0.708 (Hair et al., 2019). According to Hair et al. (2019), loadings over the designated threshold show that the construct explains more than half of the indicator's variation. The analysis necessitates the removal of items that do not achieve a loading of 0.708 or above from the model. This resulted in the

removal of several indicators, as their inclusion compromised the combination reliability and AVE values. Figure 3 indicates that the remaining indicators are dependable in elucidating the structures, since they all exceed 0.708. The post-deletion measurement model exhibits exceptional indication reliability, with all maintained items displaying robust factor loadings exceeding the required level of 0.708.

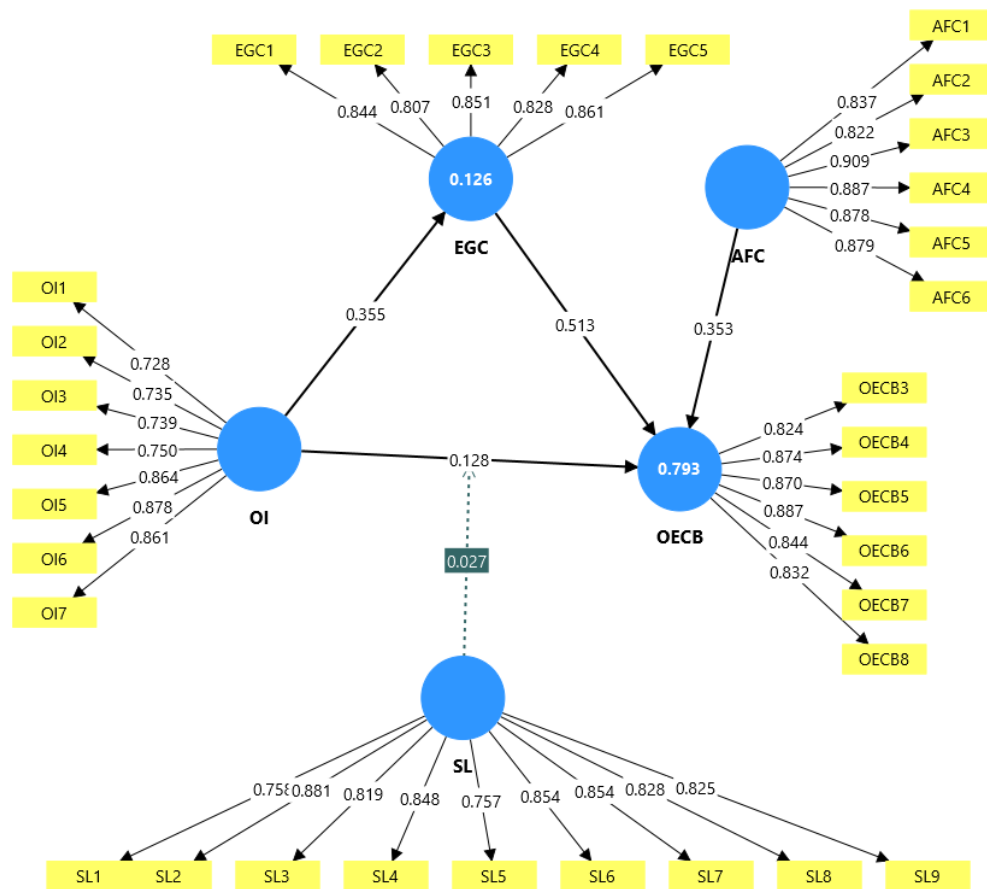


Figure 3: Measurement and Structural Specification.

Source: Author’s Construction (2025).

Assessing Internal Consistency Reliability

Assessing Consistency Within Consistency According to Saunders et al. (2009), internal consistency dependability assesses the consistency and coherence of answers across many subsets of questions. Cronbach's alpha and composite reliability measures are used to assess internal consistency

dependability (Haire et al., 2019). For a model to be deemed to demonstrate internal consistency dependability, threshold values for both metrics must be at least 0.7 (Afthanorhan, 2013).

Composite reliability reveals the upper limit of internal consistency reliability, while Cronbach's α indicates the lower limit (Acquah, 2020). According to Hair et al. (2019), composite reliability is a more reliable and superior predictor of dependability than Cronbach's α , which is a less precise measure of reliability. However, Rho A, a more accurate measure in between the two extremes, provides a useful compromise for a model when faced with outlier data concerning composite reliability and Cronbach's α . The findings of the internal consistency evaluation are displayed in Table 5.

The model has internal consistency reliability since the values in the table are higher than the given threshold (greater than 0.7). The degree to which questions or indicators correctly evaluate the intended concepts is known as a construct's validity, and it enables researchers to extrapolate results from a particular collection of questions about a construct (Saunders et al., 2009). The ability of a particular set of questions to converge or correlate when measuring the construct is known as convergent validity (Hair et al., 2014).

Average Variance Extracted (AVE) with a minimum threshold of 0.5 and factor loadings of 0.7 or above is the benchmark for assessing convergent validity (Hair et al., 2019). The construct explains more than half of the variance in its indicators when its AVE is greater than 0.5 (Afthanorhan, 2013). The variables' factor loadings and AVE values are described in depth in the following

sections. Due to their loadings on the relevant constructions being less than 0.7, which negatively affected the AVE, several elements were eliminated from the model.

Outer Loadings

In Partial Least Squares Structural Equation Modelling (PLS-SEM), outside loadings are essential for evaluating the dependability of indicators. They indicate how well each observed item (indicator) reflects its foundation latent construct. According to Hair et al. (2019), a standardized outer loading of 0.708 or higher is considered acceptable, as it means that the latent variable describes at least 50% of the variance in the observed variable. Indicators below this benchmark may weaken the measurement model and are typically considered for removal. In the present study, all retained items meet or exceed this threshold, indicating strong measurement properties across all constructs.

For the Affective Commitment (AFC) construct, the six indicators, AFC1 (0.837), AFC2 (0.822), AFC3 (0.909), AFC4 (0.887), AFC5 (0.878), and AFC6 (0.879), all recorded high outer loadings, well above the 0.708 benchmark. These values confirm that the items reliably measure employees' sense of belonging and emotional loyalty to the company. The consistency and strength of these indicators suggest excellent reliability for the construct. In the case of Employee Green Creativity (EGC), the five indicators; EGC1 (0.844), EGC2 (0.807), EGC3 (0.851), EGC4 (0.828), and EGC5 (0.861), also exhibited strong loadings. The results indicate that the construct is robustly measured by these items, with minimal measurement error. These indicators effectively capture employees' capacity to generate novel and environmentally friendly ideas, reinforcing the construct's reliability for further analysis.

For organisational environmental citizenship behaviour (OECB), all six indicators, OECB3 (0.824), OECB4 (0.874), OECB5 (0.870), OECB6 (0.887), OECB7 (0.844), and OECB8 (0.832), exceeded the threshold. The high values, particularly OECB6 (0.887) and OECB4 (0.874), confirm the strong reliability of items that measure voluntary, environment-friendly behaviours in the workplace. With respect to Organisational Identification (OI), all seven indicators, OI1 (0.728), OI2 (0.735), OI3 (0.739), OI4 (0.750), OI5 (0.864), OI6 (0.878), and OI7 (0.861), demonstrated acceptable to high loadings. The outcomes indicate that the items effectively capture employees' notion of oneness and alignment with their organisation's values and goals.

The Sustainable Leadership (SL) construct is also well-represented, with nine indicators, SL1 (0.758), SL2 (0.881), SL3 (0.819), SL4 (0.848), SL5 (0.757), SL6 (0.854), SL7 (0.854), SL8 (0.828), and SL9 (0.825), all surpassing the 0.708 cut-off. The consistently high values highlight that these items reliably measure leadership behaviours that encourage sustainability, innovation, and long-term strategic vision. In summary, the outer loadings analysis confirms strong indicator reliability for all constructs in the measurement model. Since no indicator fell below the recommended threshold, no item deletion was necessary. These results support the structural soundness of the model and provide a strong basis for subsequent assessments of composite reliability and convergent validity using Average Variance Extracted (AVE) and Composite Reliability (CR) as shown in the table 3 below.

Table 3: Indicator Loadings

Indicator	Loadings
AFC1	0.837
AFC2	0.822
AFC3	0.909
AFC4	0.887
AFC5	0.878
AFC6	0.879
EGC1	0.844
EGC2	0.807
EGC3	0.851
EGC4	0.828
EGC5	0.861
OECEB3	0.824
OECEB4	0.874
OECEB5	0.870
OECEB6	0.887
OECEB7	0.844
OECEB8	0.832
OI1	0.728
OI2	0.735
OI3	0.739
OI4	0.750
OI5	0.864
OI6	0.878
OI7	0.861
SL1	0.758
SL2	0.881
SL3	0.819
SL4	0.848
SL5	0.757
SL6	0.854
SL7	0.854
SL8	0.828
SL9	0.825

Source: Field Data (2025).

Measurement Model Assessment (Reliability and Validity)

In order to enable researchers to generalise findings from a particular set of questions related to a construct, the reliability and validity of constructs are evaluated in terms of how well questions or indicators measure internal

consistency and reliability (Saunders et al., 2009). The ability of a particular set of questions to converge or correlate when assessing the construct is known as convergent validity (Hair et al., 2014). The Average Variance Extracted (AVE) criterion, which has a minimum threshold of 0.5 and factor loadings of 0.7 or above, is used to assess convergent validity (Hair et al., 2019). According to Afthanorhan (2013), an AVE greater than 0.5 means that the construct explains more than half of the variance in its indicators. Table 4 assesses the reliability and validity of constructs through Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE).

Table 4: Reliability and Validity

Variables	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Affective Commitment (AC)	0.935	0.936	0.949	0.756
Employee Green Creativity (EGC)	0.894	0.899	0.922	0.703
Org. Environmental Citizenship Behaviour (OECB)	0.927	0.927	0.943	0.732
Organizational Identification (OI)	0.910	0.960	0.923	0.634
Sustainable Leadership (SL)	0.945	0.981	0.951	0.682

Source: Field Data (2025).

The outcomes in Table 4 indicate that all constructs exhibit excellent reliability and acceptable convergent validity. Cronbach's alpha, which measures intrinsic coherence, exceeds the standard threshold of 0.70 for all constructs, ranging from 0.894 for employee green creativity to 0.945 for

sustainable leadership. These values confirm that the items within each construct measure the same fundamental idea repeatedly. Composite reliability (ρ_a and ρ_c), this gives a more accurate approximation of internal consistency by incorporating the outer loadings of indicators, is also strong across all constructs. The ρ_a values range from 0.899 (Employee Green Creativity) to 0.981 (Sustainable Leadership), while the ρ_c values range from 0.922 (Employee Green Creativity) to 0.951 (Sustainable Leadership). All values surpass the 0.70 benchmark, further affirming the robustness of the assessment model.

Regarding congruent validity, as measured by the Average Variance Extracted (AVE), all constructs exceeded the least acceptable threshold of 0.50. The highest AVE was recorded for Affective Commitment (0.756), indicating that over 75% of the variance in its indicators is described by the construct. The AVE values for Employee Green Creativity (0.703), Organisational Environmental Citizenship Behaviour (0.732), Organisational Identification (0.634), and Sustainable Leadership (0.682) also demonstrate that each construct explains a substantial proportion of variance in its respective indicators. In summary, the assessment model demonstrates strong dependability and convergent validity. The consistently high Cronbach's alpha, composite reliability, and AVE values confirm that the constructs are measured effectively and consistently. These outcomes confirm the measurement model and support progression to the structural model assessment for hypothesis testing.

Assessing multi-collinearity

High intercorrelations between independent variables in a regression model are known as multicollinearity. Strong correlations between predictor variables can diminish the reliability of statistical inferences, increase standard errors, and distort coefficient estimation (Alin, 2010). Two main metrics are used to evaluate multicollinearity: tolerance and the Variance Inflation Factor (VIF).

Evaluation of VIF and Tolerance

Although values below 5 are still seen as acceptable in the majority of real-world research contexts, Hair et al. (2019) state that acceptable VIF values should be fewer than 3. To verify that there is no multicollinearity issue, tolerance values, which are the reciprocal of VIF ($1/VIF$), should also be more than 0.2.

Multi-Collinearity Assessment (Variance Inflation Factor - VIF)

As long as it does not compromise the results of the regression analysis, it is crucial to check the inner model for collinearity issues before assessing the R^2 . Because the VIFs in the previously mentioned table are less than 5 and 3, there are no collinearity issues (Mason & Perreault, 1991; Becker, Ringle, Sarstedt, & Völckner, 2015). These are presented in Table 5.

Table 5: Multi-Collinearity Assessment (Variance Inflation Factor - VIF)

Outer	VIF
AFC1	2.367
AFC2	2.429
AFC3	4.403
AFC4	3.615
AFC5	3.647
AFC6	3.633
EGC1	2.215
EGC2	2.136
EGC3	2.455
EGC4	2.373
EGC5	2.662
OECEB3	2.280
OECEB4	3.043
OECEB5	3.309
OECEB6	3.554
OECEB7	2.587
OECEB8	2.482
OI1	2.120
OI2	3.127
OI3	2.622
OI4	2.703
OI5	2.740
OI6	3.100
OI7	3.061
SL1	3.513
SL2	4.865
SL3	4.235
SL4	4.070
SL5	4.264
SL6	4.955
SL7	3.366
SL8	3.263
SL9	2.792
	Inner
SL x OI	1.000
AFC -> OECEB	3.575
EGC -> OECEB	3.858
OI -> EGC	1.000
OI -> OECEB	1.154
SL -> OECEB	1.006
SL x OI -> OECEB	1.027

Source: Field Data (2025).

Table 5 presents the results of the multicollinearity assessment for both the outer and inner models. For the outer model, VIF values range between

2.120 (OI1) and 4.955 (SL6). All indicators fall well beneath the conservative cut-off value of 10 suggested by Hair et al. (2019). Notably, several Sustainable Leadership (SL) indicators (e.g., SL1, SL2, SL3, SL4, SL5, SL6) recorded relatively higher VIF values above 4, but these remain below the stricter threshold of 5, indicating no critical multicollinearity issues. The majority of the other construct indicators, including Affective Commitment (AFC), Employee Green Creativity (EGC), Organisational Environmental Citizenship Behaviour (OECB), and Organisational Identification (OI), fall comfortably within acceptable limits, supporting the absence of problematic collinearity among the observed variables.

For the inner model, VIF values range from 1.000 (OI → EGC; SL × OI) to 3.858 (EGC → OECB). All are well below the conservative threshold of 5, confirming that the structural model predictors do not exhibit collinearity that could bias parameter estimates. Importantly, the interaction term (SL × OI → OECB) recorded a VIF of 1.027, showing no inflation of standard errors in the moderated path. Overall, these findings indicate that the dataset is free from serious multicollinearity concerns in both the measurement and structural models. Each construct provides unique explanatory power without redundancy, thereby enhancing the dependability and interpretability of the model's path coefficients. Furthermore, the absence of collinearity reduces the risk of common method bias (Kock, 2015) and strengthens the robustness of subsequent hypothesis testing and predictive analyses (Mason & Perreault, 1991; Becker et al., 2015; Hair et al., 2019).

Assessing discriminant validity

According to Hair et al. (2020), discriminant validity is the degree of empirical distinctiveness of conceptions, demonstrating situations in which constructs accurately assess their intended variables. To assess discriminant validity, the Fornell-Larcker criterion, HTMT (heterotrait-monotrait), and cross-loadings are used (Bagozzi & Yi, 1988).

Cross-loadings

In Partial Least Squares Structural Equation Modelling (PLS-SEM), cross-loadings are a crucial diagnostic tool for evaluating discriminant validity and ensuring that constructs are empirically distinct. To satisfy the cross-loading condition, each indicator must have a greater loading on the associated latent construct than on any other constructs in the model. This shows that rather than reflecting unrelated ideas, the indicators accurately evaluate their assigned latent variables.

As shown in Table 6, the outcomes meet the expectations of the cross-loading criterion. The establishment of discriminant validity across the measuring model is supported by the fact that all items show higher loadings on their respective constructs in comparison to loadings on other constructs. The indicators for Affective Commitment, AC1 to AC4, demonstrated high loadings on AC (ranging from 0.879 to 0.909) and substantially lower loadings on other constructs such as EGC, OEGB, and SL. Similarly, indicators for Employee Green Creativity (EGC) (EGC1–EGC5) loaded strongly on EGC (0.807–0.861) and weaker on non-associated constructs, demonstrating clear discriminant validity.

The discriminant validity of the model was further supported by the fact that five indicators (OECB3–OECB8) loaded higher on Organisational Environmental Citizenship Behaviour (OECB) (0.728–0.878) than on any of the other constructs. The same pattern holds true for organisational identification (OI), whose indicators (OI1–OI7) loaded significantly higher on OI (0.762–0.809) than on AC, EGC, or SL. Likewise, the Sustainable Leadership (SL) indicators (SL1–SL9) had loadings ranging from 0.757 to 0.881 on SL, clearly surpassing their loadings on unrelated constructs.

Finally, the interaction term (SL × OI) also loaded exclusively on its composite construct with a value of 1.000, reflecting its constructed nature as a product term. These patterns provide empirical confirmation that all indicators align more closely with their intended latent variables than with other constructs in the model. This not only meets the cross-loading standard for discriminant validity but also strengthens the reliability of the measurement model.

To sum up, the cross-loading analysis results verify that the indicators are construct-specific and do not display troublesome cross-loadings. As a result, the model exhibits good discriminant validity, confirming that each research construct is measured accurately and uniquely by its related indicators (Hair et al., 2019; Fornell & Larcker, 1981).

Table 6: Cross-Loadings of Indicators on Latent Constructs

	AFC	EGC	OECEB	OI	SL	SL x OI
AFC1	0.837	0.783	0.775	0.246	0.060	0.066
AFC2	0.822	0.671	0.680	0.202	-0.060	0.109
AFC3	0.909	0.745	0.735	0.243	0.063	0.069
AFC4	0.887	0.750	0.709	0.264	0.034	0.040
AFC5	0.878	0.707	0.685	0.187	0.020	0.032
AFC6	0.879	0.749	0.706	0.195	0.046	0.053
EGC1	0.731	0.844	0.800	0.325	-0.015	0.125
EGC2	0.635	0.807	0.654	0.227	0.061	0.089
EGC3	0.674	0.851	0.674	0.354	0.060	0.120
EGC4	0.713	0.828	0.695	0.234	0.011	0.076
EGC5	0.783	0.861	0.774	0.334	0.016	0.119
OECEB3	0.693	0.708	0.824	0.323	0.044	0.133
OECEB4	0.713	0.748	0.874	0.416	0.119	0.111
OECEB5	0.691	0.761	0.870	0.345	0.053	0.098
OECEB6	0.734	0.750	0.887	0.340	0.052	0.104
OECEB7	0.692	0.730	0.844	0.316	0.065	0.098
OECEB8	0.709	0.731	0.832	0.334	0.077	0.082
OI1	0.063	0.136	0.147	0.728	-0.034	0.054
OI2	0.124	0.172	0.226	0.735	-0.004	0.072
OI3	0.144	0.200	0.237	0.739	0.005	0.010
OI4	0.048	0.114	0.171	0.750	-0.006	0.062
OI5	0.283	0.384	0.421	0.864	0.077	0.032
OI6	0.288	0.382	0.407	0.878	-0.025	0.090
OI7	0.257	0.339	0.398	0.861	0.045	0.020
SL1	-0.020	0.002	0.014	0.002	0.758	-0.076
SL2	0.044	0.041	0.098	0.019	0.881	-0.041
SL3	0.005	0.035	0.049	0.070	0.819	-0.062
SL4	0.045	0.018	0.059	-0.033	0.848	-0.071
SL5	0.003	-0.009	0.019	-0.022	0.757	-0.056
SL6	0.011	0.015	0.069	-0.000	0.854	-0.011
SL7	0.017	0.036	0.060	0.096	0.854	-0.053
SL8	0.018	0.002	0.050	-0.007	0.828	-0.100
SL9	0.051	0.031	0.083	0.006	0.825	-0.058
SL x OI	0.071	0.128	0.122	0.058	-0.064	1.000

Source: Field Data (2025).

Fornell Larcker Criterion

A popular technique for evaluating discriminant validity in structural equation modelling is the Fornell-Larcker criterion. A hidden construct must

explain more variance in its assigned indicators than it shares with other constructs in the model, according to Fornell and Larcker (1981). According to Hair et al. (2019), this means that the square root of the average variance retrieved for each construct must be greater than its correlations with each other construct in the model. Table 7 displays the Fornell-Larcker matrix, with diagonal values indicating the square roots of the Average Variance Extracted (AVE) for each construct, while the off-diagonal values denote the associations across constructs.

Table 7: Fornell-Larcker Criterion

Items	AC	EGC	OECB	OI	SL
AC	0.869				
EGC	0.827	0.838			
OECB	0.824	0.823	0.856		
OI	0.258	0.355	0.405	0.796	
SL	0.033	0.030	0.080	0.021	0.826

Source: Field Data (2025).

Table 7 displays the findings of the Fornell-Larcker criterion used to assess discriminant validity. Each construct's square root of the Average Variance Extracted (AVE), shown on the diagonal, is higher than the correlations with any other construct (off-diagonal values). This proves that each construct satisfies the Fornell–Larcker criterion (Fornell & Larcker, 1981) by showing more variance with its corresponding indicators than with other constructs. Specifically, Affective Commitment (AC) has a square root of AVE of 0.869, which exceeds its highest correlation with another construct (0.827 with EGC). Employee Green Creativity (EGC) records a square root of AVE of 0.838, higher than its strongest correlation (0.827 with AC).

For Environmental Citizenship Behaviour (OECB), the square root of the Average Variance Extracted (AVE) is 0.856, which is higher than its highest inter-construct correlation of 0.824 with AC. Organisational Identification (OI) has a square root of Average Variance Extracted (AVE) of 0.796, surpassing its highest correlation of 0.405 with OECB. Sustainable Leadership (SL) exhibits a square root of AVE of 0.826, far above its greatest association of 0.080 with OECB. These results offer compelling evidence of discriminant validity within the measuring model. Each construct is empirically distinct and assesses a separate characteristic of the study structure. This guarantees that the latent variables are non-redundant, therefore enhancing the validity and reliability of subsequent structural framework. evaluations.

Heterotrait-Monotrait (HTMT) Criterion for Discriminant Validity

The study used the Heterotrait-Monotrait (HTMT) ratio of correlations, a more rigorous and reliable method established by Henseler, Ringle, and Sarstedt (2015), to improve the assessment of discriminant validity beyond the Fornell-Larcker and cross-loading criteria. By comparing the average correlations across distinct constructs (heterotrait-heteromethod) with the average correlations within the same construct (monotrait-heteromethod), the HTMT criterion evaluates the degree of diversity among constructs. The HTMT rule of thumb states that discriminant validity is demonstrated when HTMT values for conceptually related constructs are less than 0.90. Values beyond this threshold might indicate a lack of discriminant validity, suggesting that the constructs might not be able to be separated empirically. Table 8 displays the HTMT values among the constructs in the research

Table 8: HTMT Criterion for Discriminant Validity

	AC	EGC	OECEB	OI	SL	SL x OI
AC						
EGC	0.820					
OECEB	0.784	0.843				
OI	0.231	0.335	0.387			
SL	0.059	0.049	0.074	0.063		
SL x OI	0.073	0.134	0.127	0.063	0.072	

Source: Field Data (2025).

As shown in the table, all HTMT values range from 0.049 to 0.843, which are below the 0.85 threshold. For instance, the HTMT between AC and EGC is 0.820, while that between EGC and OECEB is 0.843, both within acceptable limits. Lower HTMT ratios are observed among constructs such as Sustainable Leadership (SL) and Organisational Identification (OI) (0.063) as well as SL and Employee Green Creativity (0.049), indicating weak associations and a clear empirical distinction. These results confirm that there is no conceptual overlap or multicollinearity and that the constructs are empirically separate. As a result, the measurement model meets the HTMT criterion for discriminant validity, increasing trust in the robustness of ensuing structural analyses and the uniqueness of each latent variable.

Structural Model Assessment

In line with the validation of the measurement (outer) model, the next step in the Partial Least Squares Structural Equation Modelling (PLS-SEM) process is the structural model assessment. Examining the proposed connections between the latent constructs in the inner model is part of this process. This stage necessitates a methodical assessment of important model parameters, such

as the predictive relevance (Q^2 Predict), effect size (f^2), and coefficient of determination (R^2), according to Hair, Hult, Ringle, and Sarstedt (2021). These measures help assess how well the model explains the variance in the endogenous constructs and the strength of the hypothesised relationships.

Coefficient of Determination (R^2)

A crucial measure of the explanatory capacity of the model is the coefficient of determination (R^2), which shows how much of the variance in the endogenous variables is explained by the exogenous (independent) variables (Hair et al., 2014). An R^2 value ranges from 0 to 1, where higher values indicate greater predictive accuracy. As a general guideline, R^2 values above 0.10 are seen as appropriate for exploratory research (Hair et al., 2019), while values closer to 1 denote strong predictive capability. Importantly, before assessing R^2 values, it was confirmed that no collinearity issues existed among the predictor variables, as previously established through VIF assessments. With this prerequisite satisfied, the structural relationships in the model were evaluated. Table 9 then tested for the R^2 .

Table 9: R^2 and Adjusted R^2 Values

	R-square	R-square adjusted
EGC	0.126	0.124
OEGB	0.793	0.791

Source: Field Data (2025).

As displayed in the table, the R^2 value for Employee Green Creativity (EGC) is 0.126, indicating that roughly 12.6% of the variance in EGC is explained by its predictors (notably organisational identification). This reflects a relatively low explanatory power, suggesting that other unmeasured factors

may explain the majority of the variation in EGC. In contrast, the organisational environmental citizenship behaviour (OECB) construct recorded a much higher R^2 value of 0.793, meaning that 79.3% of its difference is explained by the combined influence of employee green creativity, organisational identification, affective commitment, sustainable leadership, and the interaction term (SL \times OI). This demonstrates a strong predictive capability, show that the framework explains a substantial proportion of the variation in OECB. While taking into consideration the amount of predictors included, the modified R^2 values (0.124 for EGC and 0.791 for OECB) stay remarkably similar to their respective R^2 values, confirming the stability and dependability of the model's explanatory capacity.

Predictive Relevance (Q^2)

To ascertain the practical application of the structural model, it is crucial to measure its out-of-sample predictive relevance in addition to its in-sample explanatory power (e.g., R^2). To this end, Shmueli et al. (2016) advocate for the use of PLS Predict, a robust method that estimates a model's prediction power using cross-validation or sample reuse techniques rather than relying on the same dataset used to fit the model. This approach helps to avoid overfitting and ensures that the model can generalise its predictions to new, unseen data (Hair et al., 2020).

In addition to explanatory power (e.g., R^2), predictive relevance (Q^2) is a critical criterion for assessing The prediction made outside of the sample ability of a structural model. Using the PLS Predict procedure (Shmueli et al., 2016; Hair et al., 2020), Q^2 values were generated for the indicators of

Employee Green Creativity (EGC) and Organisational Environmental Citizenship Behaviour (OECB). Table 10 presents the Q² results below.

Table 10: Predictive Relevance (Q² Predict) Results

	Q ² predict
EGC1	0.098
EGC2	0.042
EGC3	0.116
EGC4	0.045
EGC5	0.104
OECB3	0.377
OECB4	0.455
OECB5	0.396
OECB6	0.424
OECB7	0.375
OECB8	0.394

Source: Field Data (2025).

The Q² Predict values in the above table range from 0.042 to 0.455 and are all positive. Hair et al. (2019) state that positive Q² Predict values show predictive relevance for the corresponding metrics. All EGC and OECB items satisfy this requirement, demonstrating the model's ability to accurately forecast out-of-sample data. As a result, the results verify that the structural model has sufficient predictive relevance for all the constructs under study.

Effect Size (f²)

The relative impact of each external (independent) variable on the endogenous (dependent) constructs must be evaluated in addition to the structural model's explanatory power as determined by the coefficient of determination (R²). This is achieved using Cohen's (1988) effect size (f²), which measures the change in R² when a specific predictor is removed from the model.

The effect size indicates how much a certain independent variable contributes to explaining a dependent variable, offering insights into its substantive importance in the model. According to established guidelines, f^2 values of 0.02, 0.15, and 0.35 indicate small, medium, and large effect sizes, respectively (Hair et al., 2019). This benchmark helps researchers determine not only whether relationships are statistically significant but also whether they are meaningful in practice. The effect size results from the model are presented in Table 11.

Table 11: Effect Size (f^2) Results

	f-square
AC -> OECB	0.169
EGC -> OECB	0.330
OI -> EGC	0.145
OI -> OECB	0.069
SL -> OECB	0.013
SL x OI -> OECB	0.003

Source: Field Data (2025).

Different degrees of influence between the predictor constructs in the model are indicated by the effect size values. Employee Green Creativity (EGC) exerts the largest effect on Organisational Environmental Citizenship Behaviour (OECB) with an f^2 value of 0.330, reflecting a strong practical impact. Affective Commitment (AC) also shows a moderate effect on OECB ($f^2 = 0.169$), suggesting that employees' emotional attachment to the organisation meaningfully supports environmentally responsible behaviours. Organisational identification (OI) demonstrates a moderate effect on EGC ($f^2 = 0.145$) but a

smaller direct effect on OEGB ($f^2 = 0.069$), indicating that OI's influence on environmental behaviour is partly channelled through green creativity.

The effect of sustainable leadership (SL) on OEGB is minimal ($f^2 = 0.013$), and the interaction term between SL and OI (SL \times OI) also produces a very small effect size ($f^2 = 0.003$), implying that while leadership may still provide contextual support, its statistical contribution in the presence of other predictors is limited. Overall, these results suggest that EGC is the most influential driver of OEGB, followed by AC and OI (indirectly via EGC). The small effect sizes for SL and its interaction term highlight that their role, although theoretically relevant, may be less substantial in practice for this dataset. This mix of strong, moderate, and small effects provides a deep comprehension of how different factors contribute to fostering pro-environmental behaviours within the mining sector.

Structural Model Assessment (Path Coefficients and Hypothesis Testing)

The study evaluated the proposed linkages by assessing the path coefficients and the significance of each association using bootstrapping in SmartPLS 4 after the measurement and structural components of the model were evaluated. This procedure estimates the standard errors and significance levels by repeatedly resampling the original dataset to test the robustness and generalisability of the results. The relevance of the relationships in the inner model is determined using t-statistics and p-values. In this context, t-values must be equal to or greater than 1.65, 1.96, and 2.57, corresponding to 10%, 5%, and 1% significance levels, respectively, while p-values must fall at or below these thresholds (Acquah, 2020). As a result, Table 12 presents path

coefficients, t-statistics, and p-values to assess relationships among variables below.

Table 12: Path Coefficient Results

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
AFC -> OECB	0.353	0.352	0.057	6.234	0.000
EGC -> OECB	0.513	0.512	0.053	9.771	0.000
OI -> EGC	0.355	0.361	0.056	6.369	0.000
OI -> OECB	0.128	0.129	0.036	3.568	0.000
OI -> EGC -> OECB	0.182	0.185	0.035	5.253	0.000
SL x OI -> OECB	0.027	0.026	0.027	0.998	0.319

Source: Field Data (2025).

As presented in Table 12, the review shows that most structural model paths are statistically significant at $p < 0.05$, providing strong empirical support for the hypothesised connections in the study. This significance suggests that the proposed conceptual framework accurately captures the underlying dynamics among the constructs examined. The findings demonstrate that the relationships are not only theoretically grounded but also supported by robust statistical evidence, thereby reinforcing the credibility of the model in explaining variations in organisational environmental citizenship behaviour (OECB) and related factors.

One of the key findings is the significant positive influence of Affective Commitment (AFC) on OECB ($\beta = 0.353$, $t = 6.234$, $p = 0.000$). This result

highlights that workers who have a deep personal connection and loyalty to their organisation are more likely to participate in voluntary, pro-environmental behaviours. Such behaviours may include energy conservation, waste reduction, and active engagement in environmental initiatives within the workplace. This underscores the importance of fostering a work a setting where workers are appreciated and emotionally connected, as such commitment directly translates into sustainable workplace practices.

Employee Green Creativity (EGC) emerges as the strongest direct predictor of OECB, with the highest path coefficient in the model ($\beta = 0.513$, $t = 9.771$, $p = 0.000$). This finding reveals that one of the main factors influencing environmentally conscious behaviour in businesses is the capacity of employees to come up with creative and practical green ideas. Creative contributions, such as developing innovative waste management solutions or designing energy-efficient processes, significantly enhance the organisation's environmental performance. Therefore, organisations aiming to strengthen their environmental citizenship culture should prioritise policies and practices that nurture creativity and empower employees to develop eco-friendly solutions.

Organisational identification (OI) also is important in shaping both EGC ($\beta = 0.355$, $t = 6.369$, $p = 0.000$) and OECB directly ($\beta = 0.128$, $t = 3.568$, $p = 0.000$). This dual influence indicates that when employees strongly relate to the principles and objectives of their organization, they not only engage in creative environmental problem-solving but also actively contribute to sustainable practices. The mediation analysis further confirms this relationship, showing that OI indirectly influences OECB through EGC ($\beta = 0.182$, $t = 5.253$, $p = 0.000$). This means that part of the effect of organisational identification on

environmental behaviour operates by enhancing employees' green creativity, which then translates into more proactive environmental citizenship.

In contrast, the moderating role of the interaction term (SL \times OI) is determined to be statistically insignificant ($\beta = 0.027$, $t = 0.998$, $p = 0.319$). This suggests that sustainable leadership (SL) does not significantly alter the relationship between organisational identification and OECB within this model. The limited influence of SL in this context may indicate that leadership alone is insufficient to shape employees' pro-environmental behaviour unless accompanied by other reinforcing factors such as creativity, commitment, and strong organisational values. Overall, the findings highlight EGC as the most powerful driver of OECB, with OI serving both direct and indirect roles, AFC contributing meaningfully, and SL's impact being minimal in this structural framework.

Discussion of the Results

The goal of this study was to investigate the intricate connections between sustainable leadership, employee green innovation, organisational environmental citizenship conduct, and organisational identification. In particular, it examined five theories that included a moderating influence in addition to direct and indirect effects. The results provide insightful information about how leadership styles and organisational identity influence ecologically conscious behaviour in the mining industry.

Organisational Identification and OECB

The study's finding that organisational identification significantly and positively influences organisational environmental citizenship behaviour ($\beta = 0.128$, $p < 0.05$) confirms the proposition in H1. This outcome suggests that

when employees see themselves as psychologically attached to and aligned with their organisation, they are more inclined to go beyond formal role expectations to support environmental sustainability. In line with the social identity theory (Tajfel & Turner, 1986), It asserts that people get some of their sense of self from belonging to social groups—in this case, their organisation. Therefore, pro-social activities like OECB are more likely to be exhibited by employees who have a strong sense of identification and belonging to the company.

This result is backed by Testa et al. (2020), who emphasise that individuals with a high level of organisational identification tend to internalise organisational values, including environmental sustainability goals, leading to voluntary green behaviours. Similarly, He et al. (2019) and Agyemang and Ansah (2023) assert that identification fosters emotional commitment, which motivates employees to contribute beyond their formal duties, including engaging in environmentally responsible actions. Thus, OI does not just predict loyalty or performance but is also important in cultivating a culture of environmental stewardship.

In the context of the mining sector, a high-impact industry often scrutinised for its environmental footprint, this result is particularly significant. Mining operations face both internal and external pressure to reduce their ecological impact. Strong organisational identification among employees increases the likelihood of take ownership of these sustainability challenges and act as environmental advocates, which can improve the firm's public image and compliance with environmental standards. This confirms the importance of nurturing a strong organisational identity as part of a strategic environmental management approach.

Furthermore, this finding adds to the expanding body of research on green human resource management by showing how psychological factors such as identification can lead to environmental outcomes. Rather than relying solely on rules or incentives, organisations can leverage intrinsic motivators like OI to foster OECB. When employees see themselves as part of an environmentally conscious organisation, their behaviours tend to reflect this identity, helping to embed sustainability into the organisational culture.

Organisational Identification and Employee Green Creativity (EGC)

H2 is strongly supported by the significant and positive correlation ($\beta = 0.355$, $p < 0.05$) between organisational identification and employee green creativity. This implies that staff members who feel a strong relationship to their organisation are more inclined to generate novel, useful, and environmentally friendly ideas in their work. Green creativity, as defined by Luu (2021), involves employees developing new ways to solve environmental problems or improve sustainable practices at work. This result highlights the motivational potential of psychological engagement and identification in cultivating innovation, especially in the environmental domain.

The findings echo the broaden-and-build theory (Aboramadan, 2022), which implies that positive emotional and psychological states, like those associated with identification, broaden individuals' thought-action repertoires, enabling greater creativity and flexibility. When employees identify with their company, they are emotionally invested and more probably to seek innovative ways to support the organisation's mission, including environmental sustainability. This intrinsic motivation can enhance creativity, particularly

when employees believe their contributions are meaningful and aligned with organisational values.

Literature further supports this link between OI and creativity. Kim et al. (2019) found that organisational identification fosters psychological empowerment, which in turn promotes creativity among employees. This is because employees who identify with their organisations often perceive their work as significant and themselves as capable of influencing positive change. In the context of green creativity, such empowerment can inspire employees to experiment with environmentally friendly solutions, suggest eco-efficient processes, or engage in waste reduction initiatives.

In environmentally sensitive sectors such as mining, fostering green creativity is essential for operational sustainability. This result underscores the importance of developing a robust feeling of shared identity and environmental vision among employees. Organisations that emphasise collective environmental goals and communicate a clear sustainability agenda are more likely to inspire green innovation from within. Hence, this finding provides valuable direction for leaders aiming to integrate sustainability into the culture and practices of their institutions by promoting psychological connectedness and organisational alignment.

Employee Green Creativity and OECB

The confirmation of H3, that employee green creativity positively and significantly influences organisational environmental citizenship behaviour ($\beta = 0.513, p < 0.05$), emphasises the pivotal role of creativity in promoting environmental responsibility at the workplace. This relationship suggests that when employees are creative in developing eco-friendly ideas and processes,

they are also more likely to act voluntarily in support of the organisation's environmental initiatives. Green creativity, therefore, serves not only as a cognitive process but also as a precursor to behavioural engagement in sustainability.

According to Kim et al. (2013), fostering a green and innovative work climate can stimulate both environmental citizenship and organisational sustainability. Creative employees often seek to align their personal environmental values with their professional conduct, leading them to engage in proactive behaviours such as reducing resource waste, participating in recycling programmes, or initiating green team projects. These activities go beyond assigned roles and reflect the very essence of OEGB.

Moreover, the link between creativity and citizenship behaviour has been previously documented in broader organisational behaviour literature. For instance, Luu (2021) highlights how innovative behaviours often accompany other discretionary efforts such as helping coworkers, supporting organisational change, and contributing to organisational goals. In this study's environmental context, green creativity appears to operate in the same way; employees who are mentally engaged in eco-innovation are also behaviourally active in promoting ecological well-being.

In industries like mining, where environmental degradation is a major concern, employee-driven creativity can be a crucial asset. Encouraging and rewarding green ideas not only empowers employees but also cultivates a feeling of possession over environmental challenges. This, in turn, leads to a more committed and environmentally responsible workforce. The strong influence of green creativity on OEGB, as shown in this study, provides

empirical support for integrating creativity-focused practices into sustainability programmes to drive voluntary and impactful environmental behaviour.

The Mediation role of EGC in the relationship between organizational identification on OECB

A more complex understanding of how identification translates into pro-environmental behaviour is provided by the support for H4, which examined the mediating function of employee green creativity (EGC) in the relationship between organisational identification (OI) and organisational environmental citizenship behaviour (OECB). The significant indirect effect ($\beta = 0.182, p < 0.05$) suggests that while identification is important, it must be channelled through creative cognitive engagement for it to meaningfully influence environmentally responsible actions. This confirms that OI influences OECB not only directly but also indirectly via EGC, revealing a partial mediation effect.

This finding aligns with Amabile's (1988) componential theory of creativity, which asserts that internal motivation (in this case, OI) is a critical antecedent to creativity. When employees feel psychologically attached to their organisation, they become more intrinsically motivated to contribute to its success. If the organisational mission includes environmental sustainability, then creative engagement becomes a key avenue through which identification leads to innovative green behaviours, eventually resulting in enhanced OECB. EGC thus acts as the behavioural engine that transforms internal psychological bonds into external environmental actions.

Furthermore, this mediation relationship is consistent with findings by Luu (2021), who showed that green creativity is important in environmental

innovation and performance. They noted that when employees feel empowered to explore and implement eco-friendly solutions, it strengthens the organisation's environmental culture and drives performance outcomes. In this context, OI enhances EGC by fostering a feeling of direction and belonging, and in turn, EGC promotes OECB by offering employees tangible avenues to act on that purpose in environmentally meaningful ways.

This mediated pathway also underscores the importance of organisational environments that nurture creativity as part of their sustainability strategy. Simply encouraging identification through branding or values alignment may not suffice. Organisations, especially those in resource-intensive sectors like mining, must invest in training, autonomy, and a safe space for idea experimentation to ensure that identification translates into innovative and responsible behaviour. Thus, managers and HR practitioners must recognise green creativity as a bridge between individual motivation and collective environmental outcomes.

The Moderation Role of Sustainable Leadership in the Relationship Between Organizational Identification and OECB

The outcomes of the study do not provide support for H5, which proposed that sustainable leadership (SL) moderates the relationship between organisational identification (OI) and organisational environmental citizenship behaviour (OECB). The interaction effect between SL and OI ($\beta = 0.027$, $t = 0.998$, $p = 0.319$) is not significant statistically, meaning that the strength of the OI–OECB relationship does not meaningfully vary according to the degree of sustainable leadership practices within the organisation. In other words, even when sustainable leadership behaviours are present, they do not significantly

amplify or diminish the translation of organisational identification into active environmental citizenship behaviours in this model.

This non-significant finding contrasts with expectations based on transformational leadership theory (Bass & Avolio, 1994), which suggests that leaders who inspire and model shared goals can enhance employees' discretionary behaviours. In the sustainability context, earlier research (Kim et al., 2019; Aboramadan et al., 2022) has emphasised that leaders who embody ecological responsibility and long-term vision should, in theory, strengthen the OI–OECB link. However, the results here suggest that such leadership behaviours alone may not be sufficient to alter this relationship unless complemented by other reinforcing factors, such as targeted environmental training, supportive policies, or stronger cultural norms around sustainability.

One possible explanation is that organisational identification, by itself, already provides a strong motivational base for engaging in OECB, reducing the incremental value of leadership moderation. Alternatively, it may be that sustainable leadership impacts OECB through other indirect mechanisms, such as fostering creativity, commitment, or resource availability, rather than by directly modifying the effect of OI. This aligns with literature by Luu (2021), which notes that leadership influence on extra-role behaviours can be subtle and may require a confluence of organisational conditions to manifest significantly.

From a practical standpoint, these findings suggest that organisations cannot rely solely on leadership to strengthen the identification–citizenship link in environmental matters. While leadership development in sustainability remains important, it should be integrated with broader systemic interventions, including embedding sustainability in performance appraisals, providing

platforms for employee-driven green initiatives, and fostering peer-to-peer environmental role modelling. These complementary strategies may create the reinforcing conditions necessary for leadership to more effectively enhance OI-driven environmental behaviours.

In sum, while sustainable leadership remains valuable for setting the tone and vision for sustainability, its moderating influence on the OI–OECB relationship appears minimal in this study’s context. This underscores the need for a multifaceted approach where leadership is one element among several organisational levers driving pro-environmental citizenship.

Affective Commitment

In relation to this research, affective commitment was introduced as a control variable to account for the possibility that employees' emotional attachment to their organisation might influence their engagement in organisational environmental citizenship behaviour, independent of the key predictor variables. Affective commitment, as conceptualised by Meyer and Allen (1991), refers to the emotional bond and identification an employee has with their organisation, which often translates into a readiness to put in extra effort on behalf of the organisation and remain committed to its success.

The empirical results demonstrated that affective commitment has a statistically significant positive effect on OECB ($\beta = 0.353, p < 0.05$). This suggests that even after accounting for the effects of organisational identification, green creativity, and sustainable leadership, affective commitment independently contributes to employees’ pro-environmental behaviours. Employees who are emotionally committed to their organisation are more likely to voluntarily engage in environmentally responsible activities, such

as conserving energy, reducing waste, and promoting sustainability practices among peers.

Previous research supports this finding, which has consistently shown that affectively committed employees are more inclined to demonstrate citizenship behaviours (Zhang et al., 2018; Luu, 2021). Specifically, in the environmental domain, affective commitment has been linked to eco-initiatives because such employees often internalise the organisation's environmental goals as their own. When employees care deeply about the organisation, they are more likely to behave in ways that enhance its environmental reputation and performance. The significance of AC as a control variable in this study suggests that organisations aiming to boost environmental citizenship among their employees should not only focus on structural factors like leadership and psychological constructs like identification but also foster emotional attachment.

Strategies such as recognition, inclusive decision-making, transparent communication, and alignment of corporate values with employee values can help strengthen affective commitment. In doing so, firms can create a more emotionally engaged workforce that supports environmental sustainability voluntarily and passionately. In summary, while not a central variable in the proposed theoretical model, affective commitment is important in understanding the antecedents of environmental citizenship behaviour. Its inclusion in the analysis reinforces the robustness of the model by controlling for psychological and emotional influences that may otherwise confound the primary relationships under investigation.

Chapter Summary

This chapter used SmartPLS to display and assess the study's empirical results. It began with the assessment of the assessment model, which confirmed that the constructs demonstrated acceptable reliability, convergent validity, and discriminant validity. The structural model results showed that organisational identification significantly influenced both employee green creativity and organisational environmental citizenship behaviour, while green creativity also had a strong positive effect on environmental citizenship and partially mediated this relationship.

Affective commitment was found to have a considerable positive impact on employees' environmental behaviours, although sustainable leadership did not significantly attenuate the association between organisational identity and environmental citizenship activity. In the end, the results show how crucial psychological attachment and creative engagement are in encouraging pro-environmental conduct in the mining industry. They also serve as the empirical foundation for the discussion and suggestions that follow in the following chapter.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter summarises the study, makes conclusions based on the main findings, and offers pertinent suggestions for practitioners, legislators, and upcoming researchers, among other stakeholders. The chapter summarises the study's contributions to the field of organisational behaviour and sustainability literature, as well as its theoretical and practical consequences.

Summary of the Study

With employee green creativity serving as a mediating variable and sustainable leadership serving as a moderating variable, the main goal of this study was to examine the impact of organisational identification on organisational environmental citizenship behaviour among 302 Gold Fields Ghana employees. The study also controlled for affective commitment to ensure that the proposed relationships were robust. The research employed an explanatory design and quantitative approach, using structured questionnaires to collect primary data from employees of Gold Fields. The data was analysed using sophisticated statistical methods, particularly Partial Least Squares Structural Equation Modelling (PLS-SEM) via SmartPLS 4. This involved evaluating the structural model (path analysis, mediation, moderation, and control effect) as well as the measurement model (reliability and validity tests). To achieve the study's overarching aim, the following specific objectives were addressed:

Organizational identification on organizational environmental citizenship behaviour

The study's findings demonstrated a strong and favourable correlation between organisational identification and environmental citizenship practices. This implies that workers are more likely to take the initiative to preserve and advance environmental sustainability if they internalise the organization's aims, mission, and values. Employees are more inclined to embrace behaviours that go beyond formal job requirements, such as conserving energy, cutting waste, or volunteering for green initiatives, when they view the success and well-being of the organization as their own.

These results corroborate previous studies that suggested employees are more likely to engage in environmentally beneficial discretionary behaviours when they have a strong sense of affiliation with the organization. Additionally, it is consistent with social identity theory, which holds that people get some of their identity from the organisations they are a member of, and that this identification inspires them to act in ways that support the organization's principles, such as environmental stewardship.

Organizational Identification and Employee Green Creativity

The study also discovered that employee green creativity is favourably and strongly impacted by organisational identification. This implies that workers who have a sense of belonging and pride in their company are more likely to come up with creative, environmentally responsible solutions to problems at work. Organisational identification fosters intrinsic motivation and a sense of ownership, which are essential conditions for creativity (Amabile, 1996). In the context of environmental management, this creativity may

manifest in novel ideas for energy efficiency, waste reduction, or sustainable resource use.

The findings echo past studies that noted that when employees align themselves with an organisation's environmental values, they are more proactive in coming up with green innovations. As a result, organisational identification functions as a psychological motivator that encourages employees to actively contribute to the organization's sustainability goals through inventiveness in addition to encouraging adherence to environmental standards.

Employee Green Creativity and OECEB

likewise, the study found a strong and favourable correlation between corporate environmental citizenship conduct and employee green inventiveness. Employees who exhibit green creativity, those who come up with innovative and eco-friendly ideas, are also more likely to participate in voluntary environmental actions at work. This finding highlights the behavioural outcome of creativity, suggesting that when employees are empowered to think differently about environmental problems, they are more engaged in sustainability efforts.

It reinforces the importance of organisational cultures and leadership that support and reward green innovation, as such environments enable employees not only to think innovatively but also to act on those ideas. The result aligns with the perspective on earlier studies that argued that creative employees are more likely to embrace environmental initiatives and support organisational sustainability goals through proactive citizenship behaviours.

The Mediating Role of Employee Green Creativity

Further, a strong and favourable correlation between employee green creativity and organisational environmental citizenship conduct was revealed by the study. This means that while organisational identification directly influences OECB, it also indirectly contributes to it by fostering green creativity. The mediation analysis shows that identification with the organisation empowers employees to develop environmentally friendly ideas, which then translates into environmentally responsible actions.

This pathway underscores the importance of creativity as a mechanism that transforms employee attitudes into behaviour. Also, the partial mediation indicates that although identification can directly support OECB, its effect is amplified when workers are also encouraged to think creatively. This discovery adds to the expanding corpus of research that combines behavioural and psychological approaches to organisational environmental management.

The Moderating Role of Sustainable Leadership

According to the study, there was no significant moderating effect of sustainable leadership on the relationship between organisational identity and environmental citizenship behaviour. This indicates that the level of sustainable leadership in the organisation does not meaningfully change or strengthen the link between employees' identification with the organisation and their pro-environmental behaviours.

In other words, while both factors may individually contribute to environmental citizenship, the presence of sustainable leadership does not significantly amplify this relationship in the current context. This contrasts with

some prior studies that have found a moderating influence, suggesting that contextual or organisational factors in this study may limit the interaction effect.

Affective Commitment as a Control Variable on OECB

Lastly, the study revealed that affective commitment significantly predicts organisational environmental citizenship behaviour. Affective commitment refers to the emotional attachment and involvement an employee has with their organisation. The results suggest that employees who feel emotionally bonded to their organisation are more likely to engage in voluntary environmental behaviours, even when not explicitly required.

This reinforces the idea that positive emotional ties to the workplace can drive discretionary behaviour that benefits the organisation and the environment. It also supports the findings that identified affective commitment as a key component in understanding extra-role behaviours such as organisational citizenship. In this context, affective commitment complements organisational identification, providing a deeper understanding of how emotional and psychological connections influence pro-environmental behaviour at work.

Conclusions

Based on the empirical results of the study, several conclusions can be drawn. First, organisational identification emerged as a strong predictor of employees' voluntary engagement in environmental behaviours. When employees feel emotionally connected and identify with their organisation's mission and values, they are more likely to act in ways that support the organisation's environmental goals. This finding reinforces the critical role of identity in shaping pro-social and pro-environmental workplace behaviours.

Secondly, the study concludes that employee green creativity is important in translating psychological attachment into actionable environmental citizenship. It serves as a behavioural bridge between organisational identification and OECB. This suggests that employees who identify with their organisation do not automatically engage in green actions unless they are also encouraged or enabled to express their creativity in environmentally responsible ways.

Thirdly, the findings indicate that sustainable leadership does not significantly enhance the effect of organisational identification on organisational environmental citizenship behaviour. While leaders who promote environmental responsibility and model sustainable practices may still contribute to a pro-environmental culture, the statistical results suggest that, in this context, such leadership does not meaningfully amplify the link between employees' identification with the organisation and their green behaviours. This may imply that other factors, such as organisational policies, resources, or individual values, are important in translating identification into environmental action.

Finally, affective commitment was found to be a significant determinant of organisational environmental citizenship behaviour, emphasising that employees who are emotionally committed to their organisation are more likely to go above and beyond their formal job roles to support environmental goals. Altogether, the study concludes that both individual-level psychological factors such as identification and affective commitment and organisational-level enablers, like green creativity and sustainable leadership, must work in tandem to achieve desirable environmental behaviours among employees.

Recommendations

In line with the findings of the study, several practical recommendations are proposed for organisational management, policy-makers, and stakeholders within the mining sector. First, organisational leaders should strengthen organisational identification by fostering inclusive work environments where employees feel valued and connected to organisational goals. This can be achieved through participatory decision-making, transparent communication of organisational values, and recognition of employee contributions. Such practices are likely to enhance employees' sense of belonging and encourage voluntary environmental behaviour within the organisation.

Second, management should actively promote employee green creativity by creating structured platforms for innovation. Organisations can introduce sustainability-focused idea competitions, internal suggestion systems, and reward schemes for environmentally beneficial innovations. Providing employees with resources, training, and support for green initiatives can help translate their organisational attachment into practical environmental improvements. Encouraging innovation-orientated work climates is particularly important in the mining sector, where environmental challenges often require creative and context-specific solutions.

Third, although the study did not find a statistically significant moderating effect of sustainable leadership, organisations should not disregard its strategic importance. Instead, firms should strengthen sustainability-orientated leadership practices by embedding environmental responsibility into leadership development programmes, performance appraisal systems, and managerial training. Leaders should be encouraged to communicate clear

environmental visions, support sustainability initiatives, and model environmentally responsible behaviour. Even where moderation effects are weak, consistent leadership commitment can still shape organisational culture, reinforce sustainability norms, and create enabling conditions for employee-driven environmental actions.

Furthermore, organisations should maintain high levels of affective commitment among employees by promoting fair treatment, open communication, and supportive working conditions. Employees who feel emotionally attached to their organisation are more likely to engage voluntarily in environmentally responsible behaviour. Strengthening organisational trust and employee well-being can therefore indirectly reinforce sustainability outcomes.

Finally, from a policy perspective, government institutions should continue to strengthen environmental governance within the mining sector. This may include enforcing environmental regulations, providing incentives for green innovation, and supporting leadership training initiatives focused on sustainability. Collaboration between regulators, industry bodies, and mining firms can help align organisational practices with national sustainability priorities while encouraging firms to adopt long-term environmentally responsible strategies.

Suggestions for Future Research

While this study provides valuable insights, it also opens avenues for further exploration. Future research should consider conducting longitudinal studies to assess how the relationships among organisational identification, green creativity, leadership, and OECB evolve over time. This would allow

researchers to capture causal effects and changes in employee behaviour. In addition, applying the current model to other sectors or regions could help test the generalisability of the findings beyond the mining sector in Ghana. Industries such as manufacturing, healthcare, or education may yield different dynamics that can enrich the theoretical framework.

Researchers are also encouraged to employ mixed-methods approaches to gain a deeper understanding of the personal experiences, motivations, and contextual factors that shape green creativity and identification in the workplace. Interviews and focus groups, for example, can complement survey findings and provide richer interpretations. Moreover, future studies could explore additional moderators, such as organisational culture, environmental training, or perceived organisational support, to further explain when and how identification leads to OECB. These contextual factors might interact with leadership styles and psychological states to influence outcomes.

Finally, team-level dynamics such as team climate, peer influence, and group identity could be investigated as potential mediators or moderators in the relationship between organisational identification and OECB. This multilevel perspective would expand our understanding of environmental behaviour from the individual level to the collective level within organisations.

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APPENDIX A
QUESTIONNAIRE

UNIVERSITY OF CAPE COAST
DEPARTMENT OF MANAGEMENT
QUESTIONNAIRES FOR MINING STAFF

Dear Sir/Madam,

This questionnaire seeks to gather information on the “Organizational identification and organizational environmental citizenship behaviour: the role of employee green creativity (mediating) and sustainable leadership (moderating) among the Mining Staff at Gold Fields. It is purely for academic purposes; therefore, any information provided will be treated anonymously and confidentially. Filling out the questionnaire will take 15-20 minutes.

You are kindly required to answer the questions as frankly as possible since you will contribute to knowledge. Please tick [] answers or options where appropriate and provide answers where applicable.

Part 1: Socio-Demographic Background

1. Sex: a. Male [] B. Female []
2. Age: a.18-28 [] b.29-39 [] c. 40-50 [] d. above 50years []
3. Level of education: a. First Degree [] b. Masters Degree [] c. PHD [] d. Others []
4. Category of Staff: a. Junior Staff [] b. Senior Staff [] c. Senior Member []
5. Years of working with the company: a. Less than 5 [] b. 6-10 [] c. 11-20 [] d. above 20years []

Part 2: Organizational Identification

This refers to the degree to which employees identify with their organization and experience a sense of oneness with its values, brand, and methods. Please indicate the extent of your agreement to each statement fixed on the 7-Point Likert Scale provided, where; 1=Least Agree, 2=Mildly Agree, 3=Moderately Agree, 4=Agree, 5=Largely Agree, 6=Greatly Agree, and 7=Strongly Agree.

NO.	Statements	1	2	3	4	5	6	7
1	My employment within my organisation is integral to my identity							
2	I perceive myself as a representative of my organisation.							
3	The principles upheld by my organisation are significant to me.							
4	I align with the objectives and principles of my organisation.							
5	The membership of my organisation holds significant value to me.							
6	I possess a profound affiliation with my organisation.							
7	I prefer to wear the brands/souvenirs of my organization							

Part 3: Organizational Environmental Citizenship Behaviour

This is a vital factor that influences the environmental performance of organizations. More specifically, it refers to the discretionary behaviour of employees that contributes to the organization's environmental management beyond their job requirements. Please indicate the extent of your agreement to each statement on how you contribute to your organization's environmental management by indicating your agreement on a Scale of 7 provided, where; 1=Least Agree, 2=Mildly Agree, 3=Moderately Agree, 4=Agree, 5=Largely Agree, 6=Greatly Agree, and 7=Strongly Agree.

NO.	Statements	1	2	3	4	5	6	7
1	I recycle the materials we use whenever possible							
2	I assist my colleagues in adopting ecologically sustainable practices in the workplace.							
3	I strive to minimise the materials utilised in my workplace.							
4	I urge my colleagues to deactivate work-related devices when they are not in operation.							
5	I advocate for eco-friendly practices among my co-workers.							
6	I advocate for my organization/department to acquire eco-friendly items.							
7	I encourage my organization/department to							

	support an environmental charity							
8	I urge my organization/department to mitigate its environmental footprint.							

Part 4: Employee Green Creativity

This is an essential aspect of green organizations, which helps in driving innovation and sustainability in the workplace. It is a multidimensional construct that combines environmental consciousness with creative problem-solving skills. Therefore, please indicate the extent of your agreement to each statement on how you help in driving innovation and sustainability at your department of work on the 7-Point Likert Scale provided, where; 1=Least Agree, 2=Mildly Agree, 3=Moderately Agree, 4=Agree, 5=Largely Agree, 6=Greatly Agree, and 7=Strongly Agree.

NO	Statements	1	2	3	4	5	6	7
1	I suggest new ways to my organization/department on how achieve environmental goals							
2	I propose new green ideas to my organization/department on how to improve environmental performance							
3	I promote and champion new green ideas to others							
4	I develop adequate plans for the implementation of new							

	green ideas in my organization/department							
5	I try to find out creative solutions to environmental problems in my organization/department							

Part 5: Sustainable Leadership

Sustainable leadership is a management approach that prioritizes solutions for environmental, social, and economic challenges in the world. Please indicate the extent of your agreement to each statement provided on the 7-Point Likert Scale (where; 1=Least Agree, 2=Mildly Agree, 3=Moderately Agree, 4=Agree, 5=Largely Agree, 6=Greatly Agree, and 7=Strongly Agree).

NO	Statements	1	2	3	4	5	6	7
1	My workplace leadership acts in a sustainable socially responsible manner							
2	My workplace leadership acts in a sustainable environmentally responsible manner.							
3	My workplace leadership's decisions are made while considering the entire organization.							
4	My organizational leadership is willing to correct mistakes that affect sustainability.							
5	My organizational leadership attempts to use unique							

	innovative methods to resolve sustainability issues.							
6	My organizational leadership balances sustainable social responsibility with profits.							
7	My organizational leadership is concerned on how sustainability affects employees.							
8	My organizational leadership communicates sustainability decisions to all involved.							
9	My organizational leadership attempts to build a culture of sustainability through its communication efforts.							

Part 6: Affective Commitment

Affective commitment is an employee's emotional attachment to their organization's goals and values. Please indicate the extent of your agreement to each statement provided on the 7-Point Likert Scale (where; 1=Least Agree, 2=Mildly Agree, 3=Moderately Agree, 4=Agree, 5=Largely Agree, 6=Greatly Agree, and 7=Strongly Agree on how you help to sustain activities at your workplace.

NO	Statements	1	2	3	4	5	6	7
1	I can put in a great deal of effort beyond normally expected of my organization.							

2	I am mostly involved in my organization.								
3	I am greatly interested in my organization								
4	I care more about my organization.								
5	I feel emotionally attached to my organization.								
6	I sincerely like my organization.								
7	I feel a strong sense of belonging to my organization								

APPENDIX B

ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

TEL: 0558093143 / 0508878309
 E-MAIL: irb@ucc.edu.gh
 OUR REF: IRB/C3/V1/25/0026
 YOUR REF:
 OMB NO: 0990-0271
 IORG #: IORG0011497

9TH JULY, 2025

Ms. Edwina Asempa
 Department of Management
 University of Cape Coast

Dear Ms. Asempa,

ETHICAL CLEARANCE – ID (UCCIRB/CHLS/2025/021)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted Provisional Approval for the implementation of your study titled **Organisational Identification and Organisational Environmental Citizenship Behaviour: The Role of Employee Green Creativity and Sustainable Leadership at Gold Fields Ghana**. This approval is valid from **9th July, 2025 to 8th July, 2026**. You may apply for a renewal of ethical approval if the study lasts for more than 12 months.

Please note that any modification to the project must first receive renewal clearance from the UCCIRB before its implementation. You are required to submit a periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us about this protocol.

Yours faithfully,

Kofi F. Amuquandoh
 Ag. Administrator

ADMINISTRATOR
 INSTITUTIONAL REVIEW BOARD
 UNIVERSITY OF CAPE COAST

Prof. Fiifi Amoako Johnson
 Chairperson

CHAIRPERSON
 INSTITUTIONAL REVIEW BOARD
 UNIVERSITY OF CAPE COAST