The impact of leadership in promoting green management practices: a field study at Northern Border University

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Abstract:

This study examines the role of leadership in promoting green management practices at Northern Borders University. The aim is to understand the role of leadership in enhancing green management practices at Northern Borders University. A survey methodology was used to collect data through a questionnaire from a sample of 211 employees holding leadership positions at Northern Borders University. The results showed a positive relationship between leadership styles and green management practices. The study recommends enhancing transformative leadership styles and providing training on green management practices..

 Keywords: Administrative leadership, green management, sustainability, environmental behavior.

Jel Classification Codes M10, M12, M29

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1. INTRODUCTION

The world is currently facing increasing environmental challenges, such as climate change and pollution, which have prompted many institutions to adopt green management practices. Green management practices aim to integrate environmentally friendly practices into all aspects of business operations, ranging from manufacturing to marketing, in order to achieve sustainable development. Environmental and sustainable development issues are of utmost importance today, requiring serious action to preserve the environment and mitigate negative impacts on nature. Therefore, emphasis on green management and the adoption of sustainable environmental practices are necessary for organizations to contribute to sustainable development and achieve a balance between economic, social, and environmental dimensions.

Leadership plays a crucial role in promoting green and sustainable management practices. Effective leaders can significantly influence shaping the organizational culture and motivate the workforce to adopt and implement sustainable practices in all aspects of work. This allows diverse perspectives to be shared and creative solutions to be developed for environmental challenges. However, green practices face obstacles such as limited financial resources, limited environmental awareness, and resistance to change, which need effective solutions to promote widespread adoption of green practices. Green management practices emerge as a promising solution to achieve sustainable development. These practices aim to integrate environmentally friendly practices into all aspects of administrative operations, ranging from manufacturing to marketing, in order to reduce the negative environmental impact of human activities. These practices include the use of renewable energy, reduction of natural resource consumption, recycling, efficient waste management, and the creation of environmentally friendly products and services.

Leadership plays a pivotal role in promoting green management practices within organizations. Inspirational leaders are capable of motivating employees to adopt environmentally friendly behaviors, creating

an organizational culture that supports sustainability, and providing the necessary resources to effectively implement green management practices.

The Northern Border University is dedicated to promoting green management practices through leadership, in line with the Kingdom's Vision 2030, which places great emphasis on environmental protection and sustainability. The university plays a pivotal role in this field by adopting leadership styles that motivate employees to adopt environmentally friendly behaviors and creating an organizational culture that supports sustainability. Additionally, the university provides the necessary resources to effectively implement green management practices and encourages research and studies on best green management practices.

Through the efforts, we aim to address the following problem:

What is the impact of administrative leadership in promoting green management practices at Northern Border University?

1. Research Framework:
1.1 Importance of the Research:

This study holds significant academic importance as it contributes to bridging the knowledge gap regarding the role of leadership in enhancing green management practices, particularly in the Saudi context. It also provides a valuable theoretical contribution by testing a model that links leadership styles with green management practices in higher education institutions.

The study offers practical recommendations for enhancing the role of leadership at Northern Border University, with the potential for generalization to other institutions in the Kingdom of Saudi Arabia. Furthermore, the study contributes to promoting sustainability by encouraging the adoption of green management practices, which positively affect the environment and society.

Lastly, the study contributes to achieving the goals of Vision 2030, especially concerning environmental protection and sustainability, by presenting a pioneering model for how Saudi institutions can actively participate in accomplishing these objectives.

1.2 Research Objectives:

The study aims to analyze the environmental awareness and knowledge levels of individuals and society regarding environmental issues and green practices. Additionally, it seeks to identify the factors influencing the adoption of green practices in work contexts and institutions. Furthermore, the study aims to evaluate the impacts resulting from green practices and identify different leadership styles at Northern Border University (the location of the field study). It also aims to provide recommendations for enhancing the role of leadership in promoting green management practices at the university, in line with Vision 2030 of the Kingdom. Finally, the study aims to contribute to the existing research literature in this field.

1.3 Research Hypotheses:

The study hypotheses are as follows:

Main Hypothesis 1: The respondents have positive attitudes towards the perception and importance of leadership styles on green management practices.

Main Hypothesis 2: There is a statistically significant impact of administrative leadership styles at Northern Border University on green management practices**.**

1.4 Study Terminology and Variables:

1.4.1 Administrative Leadership (Independent Variable): It refers to a set of abilities and skills such as situational analysis, decision-making, effective communication, team motivation, change management, and human resource development (Van Wart, 2013). The success of administrative leadership relies on the ability to build positive relationships and trust with the team, motivate them, and empower them to achieve organizational goals and deal with various challenges (Bensimon, 1989).

1.4.2 Green Management (Dependent Variable): Green management is an administrative approach that aims to integrate environmental concern and sustainability into the activities of institutions and organizations (Molina‐Azorín et al., 2009). Green management aims to achieve a balance between the economic, social, and environmental dimensions of

business, with the goal of long-term sustainability (Alfred and Adam, 2009).

1.5 Previous Studies:

- Al-Harithi et al. (2017) researched "The role of ethical leadership in promoting innovative work behavior of employees through perceived meaningful work among employees of the higher education sector in the Sultanate of Oman."

Research Methodology: Survey-based study with a sample of 250 employees from 5 universities in Oman.

Results: The study revealed a positive relationship between ethical leadership and green management practices in higher education institutions in Oman.

Recommendations: The need to reinforce ethical leadership principles in higher education institutions in Oman and encourage green practices**.**

- Al-Marzooqi et al. (2018) investigated "The impact of green leadership on organizational performance in the higher education sector in the UAE."

Research Methodology: Analytical study based on data from 150 universities in the UAE.

Results: The study highlighted a positive relationship between green leadership and organizational performance in UAE higher education institutions.

Recommendations: The need to adopt green leadership practices in UAE higher education institutions and provide support for implementing such practices.

- Al-Malik et al. (2019) studied "The role of visionary leadership in enhancing environmental sustainability in Saudi higher education institutions."

Research Methodology: Exploratory study with a sample of 300 faculty members from 10 Saudi universities.

Results: The study found that visionary leadership plays a significant role in enhancing environmental sustainability in Saudi higher education institutions.

Recommendations: The need to establish training programs to develop visionary leadership skills among Saudi higher education leaders and

allocate budgets to support environmental sustainability initiatives.

- Al-Sayed et al. (2020) researched "The impact of democratic leadership on green management practices in Egyptian higher education institutions."

Research Methodology: Analytical study based on data from 200 Egyptian universities.

Results: The study revealed a negative relationship between democratic leadership and green management practices in Egyptian higher education institutions.

Recommendations: The need to empower transformational leadership in Egyptian higher education institutions and reduce reliance on democratic leadership.

- Al-Zubn (2021) studied "The role of transformational leadership in enhancing green management practices in Jordanian universities."

Research Methodology: Survey-based study with a sample of 400 employees from 10 Jordanian universities.

Results: The study showed a positive relationship between transformational leadership and green management practices in Jordanian universities.

Recommendations: The need for universities to focus on developing transformational leadership skills among their leaders and providing an effective environment for implementing green management practices.

2. **The theoretical framework of administrative leadership and its relationship to green management practices.**

2.1administrative leadership: The theoretical framework of administrative leadership refers to the underlying theories and concepts that guide the understanding and practice of leadership in an organizational context.

Leadership is the process of influencing and directing the behavior of others to achieve shared goals (Cheng, 2002). A leader, on the other hand, is a person who possesses the ability to influence, motivate, and guide others towards achieving objectives. Administrative leadership is an approach that deals with the relationships and impacts between leaders and followers within the context of organizations and institutions (McLaurin, 2006).

Administrative leadership is a vital skill for leaders and managers in directing and organizing resources and work teams to achieve organizational objectives (farhana & Hayati, 2023).

2.2 Types of Leadership:

There are various types of leadership styles that leaders adopt to influence and direct others towards achieving shared goals. These styles differ based on the leader's personality traits, environmental factors, and organizational objectives.

2.2.1 Transformational Leadership:

The transformational leader inspires and motivates employees to achieve ambitious goals and creates a positive work environment that promotes innovation and creativity (Almansour, 2012).

Characteristics of Transformational Leadership (Bass, 1999):

- Clear Vision: The leader has a clear and concise vision of the organization's goals and strategies to achieve them.
- Charisma: The leader has a strong and magnetic personality that influences and motivates employees.
- Effective Communication: The leader communicates effectively with employees and clearly articulates goals and expectations.
- Risk-Taking: The leader is not afraid of taking risks and encourages employees to try new ideas.
- Empathy: The leader cares for employees and their needs and helps them achieve their aspirations.

2.2.2 Democratic Leadership:

The democratic leader includes employees in the decision-making process and encourages them to share their ideas and opinions (Buba & Tanko, 2017).

Characteristics of Democratic Leadership (Choi, 2007):

- Openness to Ideas: The leader welcomes and encourages employees' ideas and opinions and promotes open communication.
- Trust in Employees: The leader trusts the employees' abilities and provides them with the opportunity to participate in decision-making.
- Equity and Fairness: The leader treats all employees fairly and avoids

discrimination and favoritism.

- Patience: The leader is patient and gives employees time to express their opinions.

2.2.3 Bureaucratic Leadership:

The bureaucratic leader emphasizes adherence to rules and procedures and focuses on control and discipline (Igbaekemen, 2014).

Characteristics of Bureaucratic Leadership (Idrus, Armanu, & Rohman, 2015):

- Attention to Details: The leader pays attention to details and emphasizes the importance of following rules and regulations.
- Efficiency: The leader strives for efficiency and reduces errors and wastage.
- Organization: The leader is skilled in organizing and coordinating tasks and emphasizes the importance of adhering to the schedule.
- Integrity: The leader upholds the rules and regulations and applies them to everyone equally.

2.2Green management:

Green management, also known as environmental management, refers to a comprehensive approach that integrates environmentally friendly practices into all aspects of an organization's operations (Darnall, Jolley, & Handfield, 2008). It is a proactive strategy that aims to minimize negative environmental impacts while maximizing resource efficiency and promoting sustainability (Liu, Zhu, & Seuring, 2017).

2.2.1 Importance of green management:

Green management has become increasingly important to organizations due .1to the urgent need to deal with growing environmental concerns such as climate change and resource depletion. Some of the key benefits of adopting green practices include (Alzgool, 2019):

-Reducing environmental impact**:** By focusing on energy savings, waste reduction, and pollution control, green management reduces an organization's environmental footprint.

- Improving resource efficiency: Green practices encourage the efficient

use of resources such as water, energy and raw materials, leading to cost savings and reduced reliance on limited resources.

− Enhancing brand image: Consumers are increasingly aware of environmental issues and prefer companies with a strong commitment to sustainability. Green management enhances brand reputation and customer loyalty.

− Fostering Innovation: Green practices often require innovative solutions, which fosters a culture of creativity and problem solving within the organization.

− Regulatory Compliance: Environmental regulations are becoming more stringent globally. Green management ensures compliance with these regulations and avoids fines or potential legal problems (Alfred & Adam, Green management matters regardless, 2009).

2.2.2 Essential Elements of Green Management:

− Leadership Commitment: Top management plays a crucial role in driving green initiatives. Their commitment and vision are essential for successful implementation.

− Strategic Planning: Integrating environmental considerations into the organization's strategic plan ensures alignment of long-term sustainability goals with overall business objectives (Rezaei-Moghaddam, 2016).

− Employee Engagement: Educating and motivating employees about green practices is critical. Encouraging their participation enhances ownership and accountability.

− Resource Management: Focusing on energy efficiency, water conservation, and responsible waste management are fundamental to green management. This can include using renewable energy sources, implementing recycling programs, and reducing paper use.

− Life-cycle Thinking: Considering the environmental impact of a product or service throughout its entire life cycle, from raw material extraction to disposal, helps identify areas for improvement.

− Sustainable Financing: Choosing eco-friendly suppliers and

materials demonstrates the organization's commitment to sustainability and reduces the environmental impact within the supply chain (Lee, 2009).

2.3 relationship between administrative leadership and green management

The relationship between administrative leadership and green management practices lies in the role that leaders play in shaping and influencing organizational culture, decision-making processes, and employee behaviors. Effective administrative leaders can inspire and motivate employees to embrace and implement green practices by setting a clear vision, providing support and resources, and fostering a culture of environmental responsibility (Alenezi & al, 2024).

Theoretical perspectives such as transformational leadership, ethical leadership, and visionary leadership are often explored in relation to their impact on promoting green management practices. These leadership approaches emphasize the importance of values, ethics, and long-term sustainability in organizational decision-making and actions (Zhang & Ma, 2021).

By integrating the principles of administrative leadership with green management practices, organizations can create a synergy that not only benefits the environment but also contributes to improved organizational performance, employee engagement, and stakeholder satisfaction (Cahyadi, 2022).

3. Field study

3.1 Study population and sample:

The research population of the Northern Border University, including both administrative staff and academic leaders, was represented. As for the study sample, 211 responses were obtained, which aligns with the nature of the research (Altham, 1978)

.3.2 Study tool:

The study utilized a questionnaire as the main data collection tool. The questionnaire was distributed to a group of university employees at various levels, with 211 responses. The questionnaire consisted of three parts:

Part 1: Personal Information - This section was designed to gather personal information such as gender, age, educational degree, and years of experience.

Part 2: Independent Variable - This part focused on managerial leadership styles and included 12 related questions.

Part 3: Dependent Variable - This part focused on green management practices and included 8 questions.

A Likert five-point scale was used in the questionnaire, with the following weightings assigned to each response option: strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1).

3.3 Reliability of the tool and statistical analysis method:

The reliability of the tool was ensured by conducting a pilot study with a group of professors of faculty. Some questions were changed, modified, and additional questions were added to finalize the questionnaire. To further establish the reliability of the research instrument, Cronbach's Alpha was used, and the value obtained was 0.93, which is higher than the accepted confidence level (0.70). This is considered acceptable for the purposes of academic research (Taber, 2018).

Regarding the statistical methods used, the SPSS statistical software program was utilized to perform the necessary statistical analyses, with the following statistical tools used:

The Shapiro-Wilk test, which showed that the sample follows a normal distribution, and the sample size exceeds 30.

Mean and standard deviation computations.

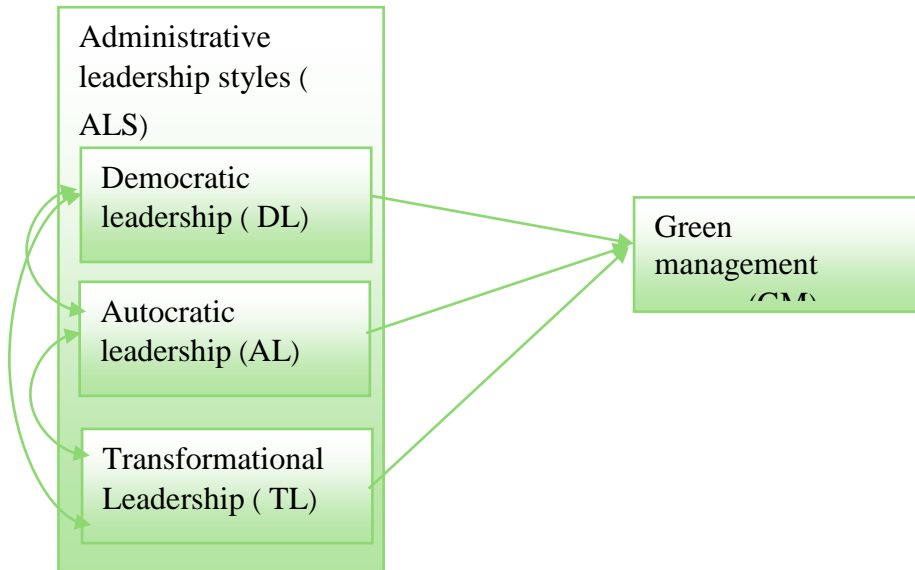Correlation coefficients for determination and interpretation.

f-value and t-value calculations to prove or disprove hypotheses.

Multiple linear regression model.

3.4. Field study model:

The following figure shows us the field study model

Figure (01): The field study model

Source: Prepared by the researcher

4. Hypothesis testing

4.1 Testing the first hypothesis.

H_1: The respondents have positive attitudes towards the perception and importance of leadership styles on green management practices.

This can be explained through the following table (1):

Table 01. Descriptive Statistics

Variable	Min	Max	Mean	St. Dev
DL	4,2	5	4.94	0.919
AL	1.5	2	1.82	0.999
TL	3.8	5	4.28	0.857
ALS	3.3	5	3.68	0,923
GM	3.9	5	4.52	0,8746
N			211	

- Source: SPSS Outputs.

The table shows that the arithmetic averages for creativity ranged between (3.82-4.94), as this means that the study sample is fully aware of the importance of the different leadership styles, the first of which was democratic leadership through empowering individuals and giving them the opportunity to express their opinion and make decisions. The second place was the share of transformational leadership, which indicates the organization's interest in developing skills, is leadership through the transformational style based on creating innovation and developing it among subordinates. They reported the autocratic style, whose arithmetic average was very weak, which indicates its lack of importance among the study sample in influencing green management practices and encouraging individuals on it. The value of the standard deviation reached (0.688), and this means that the amount of dispersion among the sample members is weak.

4.*2* Testing the second hypothesis.

There is a statistically significant impact of administrative leadership styles at Northern Border University on green management practices.

Table 02. correlations between variables

		GM
DL	Pearson Correlation	0.828
	Sig. (2-tailed)	0,000
AL	Pearson Correlation	0,276
	Sig. (2-tailed)	0,000
TL	Pearson Correlation	0.763
	Sig. (2-tailed)	0,000
ALS	Pearson Correlation	0.568
	Sig. (2-tailed)	0,000

Source: SPSS Outputs.

From the table it is clear that there is an overall moderate correlation between administrative leadership styles and green management. However, there is a difference in this relationship from one element to another, as it is noted that the element most closely linked to green management is the democratic leadership style, followed by the transformational leadership

style, while a weak correlation with... The autocratic leadership style has a correlation coefficient of (0.27). This can be explained by the fact that individuals do not believe in the impact of autocratic leadership on green management practices at Northern Border University.

Table 03. Calculate the coefficient of determination.

	Correlation coefficient (R)	Coefficient of determination (R^2)	Adjusted coefficient of determination (R^{-2})	Standard error
DL	0.828	.0 786	0.743	0.436
AL	0,276	0,225	0,207	**0.342**
TL	0.763	0.683	0.542	**0.752**
ALS	0.568	0.521	0.486	**0.481**

Source: SPSS Outputs.

The statistical metrics in the table provide information about the quality of the regression model and its accuracy in interpreting the data.

Standard Error: The standard error represents the average amount of variance or dispersion of the data points around the regression line. The standard error value is low and indicates that the model achieves accurate and stable predictions. Standard error values range between 0.436 and 0.752.

Adjusted Coefficient of Determination - R^{-2}: The Adjusted Coefficient of Determination is an indicator of the extent to which the independent variables in the regression model explain the change in the dependent variable, as we notice the value of the Adjusted Explanation Coefficient approaching, and the values of the Adjusted Explanation Coefficient range between 0.207 and 0.743. This indicates that the variables in general for leadership styles together explain 48% of the value of the variance in green management. Referring to each variable, we find that the most explanatory variable is democratic management with a percentage of 82%, followed by transformational leadership with an explanation factor of 54%, and finally autocratic leadership with a weak explanation factor of 20. %.

Table 04. Analysis of Variance (ANOVA)

	Sum of Squares (SS)	Mean Square (MS)	F-value	Significance Level
Regrission	7.679	7.679	30.894	**0.000**
Residuel	7.954	0.249		
Total	15.633			

Source : SPSS Outputs

Through Table 4, the estimated value of F was 30.894, and the corresponding calculated significance level was 0.000. This indicates that the F value is statistically significant, which leads to the rejection of the null hypothesis (H0), which assumes that there is no statistically significant effect of administrative leadership styles on green management practices among the study sample. Therefore, we accept the alternative hypothesis (H1), which indicates that there is a significant effect of administrative leadership styles on green management practices among the study sample. This can be said that the administrative leadership styles at Northern Border University may have important implications for promoting green management practices, or for developing policies that encourage leadership that focuses on sustainability.

Testing the sub-hypotheses, the second main hypothesis

Table 05. Testing the significance of regression coefficients according to Student statistics

	B	Std. err	BETA	T	SIG
C	2.444	0.688	/	3.551	-
DL	0.296	0.172	0.292	1.725	0.000
AL	0.589	0.122	0.173	1.458	0.000
TL	0.566	0.119	0.645	3.755	0.000

Source: SPSS Outputs.

According to the above table (SIG) is at (0.000), which is less than the acceptable level of significance (0.05). This indicates a statistically significant effect between DL, AL, TL and LT. On GM, which means accepting the hypothesis of the influence of the three leadership styles on green management practices at Northern Border University, with different proportions for each style.

5.Conclusion

Through this research, we tried to address one of the modern and important topics in the success and continuity of institutions, which is the impact of adopting administrative leadership styles on green management practices.

Administrative leadership styles refer to the behaviors and qualities that leaders follow in managing employees and operations, while green management practices include actions that organizations take to reduce their environmental impact.

The first hypothesis stated that the sample members have positive attitudes towards recognizing and importance of leadership styles in green management practices. Let us discuss this hypothesis.

− The positive attitude towards the perception and importance of leadership styles in green management practices indicates that participants believe that effective leadership plays an important role in promoting and implementing environmentally friendly practices within organizations, from which we conclude that:

− Effective leadership has the ability to shape organizational culture and drive sustainable practices. Leaders who prioritize environmental sustainability and integrate it into their management style can inspire and motivate employees to adopt green practices. Positive attitudes toward the concept and importance of leadership styles indicate that sample members recognize the influence of leaders in promoting sustainability.

− The positive attitude towards the awareness and importance of leadership styles in green management practices means that participants are aware of environmental challenges and the need for sustainable

practices. They recognize that leadership can play a critical role in influencing behavior and decision-making toward environmentally responsible actions.

- Positive attitudes toward leadership styles indicate that participants believe in the ability of leaders to create a supportive environment that encourages and rewards sustainable actions among employees.

- Effective leadership in promoting green management practices can lead to various benefits for organizations, such as reducing costs, enhancing reputation, and increasing employee satisfaction. Positive attitudes toward leadership styles indicate that respondents recognize the positive impact of sustainable practices on organizational performance and support leadership efforts in this regard.

- Overall, the positive attitude towards the perception and importance of leadership styles in green management practices reflects the belief in the importance of leadership in driving environmental sustainability and promoting a culture of responsible practices.

-The second hypothesis stated that there is a statistically significant effect of administrative leadership styles at Northern Border University on green management practices. Let us discuss this hypothesis. This shows:

- The results of the hypothesis indicated that the leadership styles adopted by administrators at Northern Border University have a significant impact on the promotion and implementation of green management practices. This means that administrators' decisions, actions, and communications related to sustainability can influence the adoption and integration of environmentally friendly practices within the university.

- The hypothesis indicated that the leadership styles of administrators at Northern Border University have a statistically significant impact on green management practices.

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