

## The Role of Sustainable Leadership in Promoting Green Organizational Behavior in Iraqi Universities

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**Abstract:** This study investigates the crucial role of Sustainable Leadership (SL) in fostering Green Organizational Behavior (GOB) within the context of Iraqi universities. Against a backdrop of global environmental challenges and local reconstruction efforts, universities are positioned as key drivers for sustainable development. The research examines the extent to which leadership practices—characterized by long-term vision, ethical responsibility, and empowerment—can incentivize and institutionalize eco-friendly practices among academic and administrative staff. A quantitative research design was employed, utilizing a structured questionnaire distributed to a sample of faculty and staff from various public Iraqi universities. Data were analyzed using descriptive and inferential statistical methods via SPSS.

The findings reveal a significant positive relationship between sustainable leadership and green organizational behavior. Key dimensions of SL, such as visionary strategic planning and ethical decision-making, were found to be strong predictors of GOB, leading to practices like energy conservation, waste reduction, and increased recycling initiatives. The results confirm that sustainable leadership is not a supplementary function but a fundamental pillar for cultivating an organizational culture of environmental responsibility.

The study concludes that integrating sustainable leadership principles is imperative for transforming Iraqi universities into green campuses. It provides a strategic framework for university administrators and policymakers to develop leadership training programs and institutional policies that embed sustainability as a core value, thereby contributing to both environmental preservation and the development of a socially conscious generation.

**Keywords:** Sustainable Leadership, Green Organizational Behavior.

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**Research Introduction:** The contemporary environment is witnessing a fundamental transformation toward sustainability as a core pillar for achieving comprehensive development. Sustainability is no longer confined to economic and industrial sectors; rather, it has extended to become a central focus within the higher education sector. Universities are considered incubators of knowledge and centers of intellectual and social influence, which places upon them the responsibility of leading change toward environmentally friendly practices. In this context, sustainable leadership emerges as a proactive managerial approach that does not aim solely at achieving operational efficiency, but rather seeks to achieve a balance among the economic, social, and environmental dimensions in the long term. In the Iraqi context, where environmental challenges intersect with the responsibility of reconstruction, an urgent need arises to adopt a sustainable leadership model in universities. This research comes to explore the role of such leadership in enhancing green organizational behavior, which represents a set of voluntary and formal practices adopted by academics and administrators to preserve natural resources and reduce the negative environmental impact of university activities. The research seeks to answer a central question: How can sustainable leadership serve as a key driver in transforming Iraqi universities into green campuses that contribute to building an environmentally aware generation capable of confronting future challenges.

### Section One

#### Methodology and Previous Studies

##### First: Study Methodology

###### 1. Research Problem:

Despite the growing importance of environmental sustainability at the global level, Iraqi universities face challenges in adopting and implementing environmental practices. This study examines the extent to which university leaders

(deans, heads of departments, and unit managers) contribute to embedding environmentally friendly cultures and behaviors among faculty members, administrative staff, and students.

**2. Research Questions:**

- What is the level of sustainable leadership practices among leaders in the selected Iraqi universities?
- What is the level of green organizational behavior practiced among members of the selected Iraqi universities?
- Is there a statistically significant relationship between sustainable leadership practices and the enhancement of green organizational behavior?
- Can sustainable leadership predict the level of green organizational behavior in universities?

**3. Research Objectives:**

- Measuring the level of practicing the dimensions of sustainable leadership in the Iraqi university environment.
- Evaluating the degree of green organizational behavior practiced among academics and administrators.
- Identifying the nature of the relationship and impact between the study variables.
- Providing recommendations to officials and decision-makers in Iraqi universities to enhance the role of leadership in achieving environmental sustainability.

**4. Significance of the Study:** The significance of the study from the theoretical perspective lies in filling a gap in the local literature regarding the application of sustainable leadership concepts and green organizational behavior in higher education institutions. From the practical perspective, it contributes diagnostic results to university administrations to understand the current reality and develop improvement plans to enhance green practices.

**5. Study Limits:** • **Human:** The study sample consists of faculty members and administrative staff at the University of the Future.

• **Spatial:** The study was conducted at the University of the Future in Babil Governorate.

• **Temporal:** The study was carried out during the period from 12/5 to 15/10/2025.

**6. Study Method:** The study adopted the descriptive–analytical (correlational) approach as the most appropriate method, as it aims to describe the phenomenon, analyze the relationships among its variables, and test the hypotheses.

**7. Population and Sample of the Study:**

• **Population:** All faculty members (professors, department heads) and administrators (unit managers and employees) at the University of the Future.

• **Sample:** A stratified random sampling method was used to ensure representation of different colleges and job levels. The sample size was determined using the modified Cochran formula (for finite populations) to ensure representativeness, and it reached (140) participants.

$$n_a = \frac{n_0}{1 + \frac{n_0 - 1}{N}}$$

**1. Data Collection Tools:**

The questionnaire was used to collect the data.

**2. Statistical Methods:**

• **Descriptive statistical analysis:** arithmetic means, standard deviations, frequencies, and percentages.

• **Inferential statistical analysis:**

○ **Normality test:** Kolmogorov–Smirnov test.

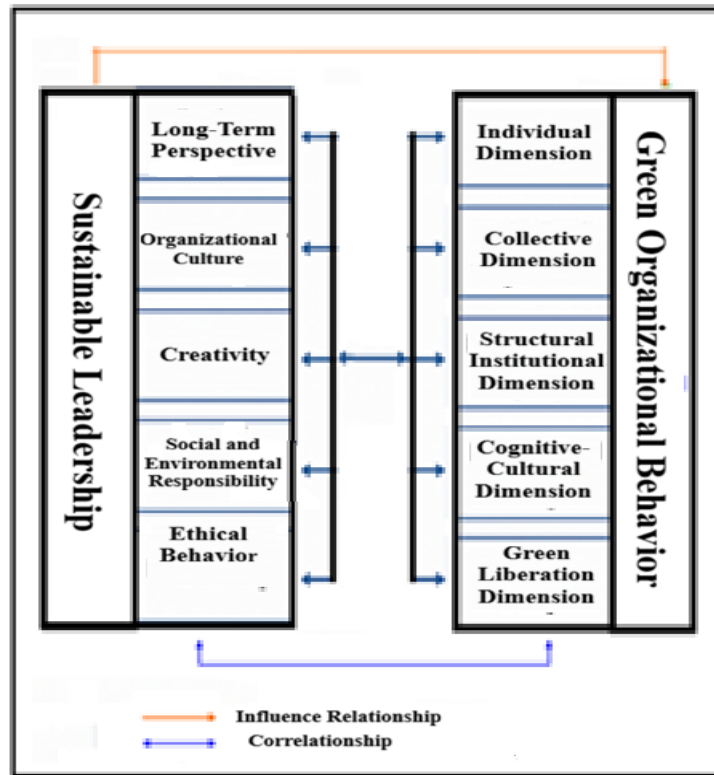
○ **Correlation coefficient:** Pearson or Spearman to examine relationships.

○ **Multiple regression analysis:** to test the ability of sustainable leadership to predict green organizational behavior.

○ **T-test and analysis of variance (ANOVA):** to examine differences according to demographic variables.

○ **Validity and reliability analysis:** calculating Cronbach’s Alpha coefficient to assess the reliability of the questionnaire, and validity through expert (judges’) validity.

**Second: The Hypothetical Model of the Study**



**Figure (1) Hypothetical Study Outline**

**Hypotheses**

**• Main Hypothesis:**

There is a positive statistically significant correlation between sustainable leadership practices and the level of green organizational behavior at the University of the Future.

**• Sub-hypotheses:**

1. There is a positive statistically significant correlation between the strategic vision of leadership and green organizational behavior.
2. There is a positive statistically significant correlation between leadership empowerment of individuals and green organizational behavior.
3. There is a positive statistically significant correlation between leadership practice of justice and ethics and green organizational behavior.
4. There is a positive statistically significant correlation between leadership adoption of systems thinking and green organizational behavior.
5. There is a positive statistically significant correlation between leadership focus on long-term responsibility and green organizational behavior.

**• Predictive Hypothesis:**

The dimensions of sustainable leadership collectively can statistically significantly predict the level of green organizational behavior at the University of the Future.

**Second: Previous Studies**

Previous studies have shown the existence of a strong positive relationship between sustainable leadership practices and the enhancement of green organizational behavior. Most of these studies focused on mediating mechanisms (such

as employees' organizational culture) and moderating factors (such as employees' environmental commitment) that explain this relationship.

The study by **Robertson & Barling (2013)**, which examined the impact of leaders on employees' pro-environmental behaviors in Canada, found that transformational leadership positively affects employees' voluntary environmental behavior. It clarified that this effect occurs through one mediator, namely employees' "pro-environmental attitudes."

The study by **Graves & Sarkis (2018)**, conducted on employees in the service sector and titled "*The Role of Leadership Perceptions, Values, and Employee Motives in Pro-Environmental Behaviors*," confirmed that employees' perceptions of leadership support for environmental issues were among the strongest predictors of their green behavior, even after controlling for their personal values and motives.

Other studies focused on mediating mechanisms, such as psychological empowerment, as in the study by **Kim et al. (2017)**, which found that green leadership enhances employees' sense of empowerment and meaning in their work ("I can make a difference for the environment"), and this feeling in turn motivates them to engage in green behaviors.

The study by **Chen & Chang (2013)** showed that green leadership builds trust between supervisors and subordinates. This trust makes employees more willing to follow leaders' directions and environmental initiatives, even those that require extra effort.

The study by **Islam et al. (2020)** explained that when an organization adopts sustainability as part of its identity and is led by sustainable leaders, employees develop a strong sense of belonging to this "green" identity. Consequently, their green behavior becomes a means of maintaining and strengthening this identity.

Other studies addressed moderating factors, such as employees' environmental commitment, as in the study by **Bissing & Olson et al. (2013)**, which found that the effect of environmentally supportive leadership on green behavior was stronger among employees with high pre-existing environmental commitment.

The study by **Norton et al. (2015)** indicated that the impact of sustainable leadership is amplified when it is part of a comprehensive organizational culture that supports sustainability, or when it is coupled with incentive systems that recognize green efforts (**Ramus & Steger, 2000**).

In the Arab context, several Arab studies confirmed the effectiveness of sustainable leadership in improving environmental practices and enhancing green culture, including studies in the Arab Republic of Egypt (**Al-Fiqi et al., 2025**), Algeria (**Ben Yahya & Ibrahim, 2024**), and Saudi Arabia (**Al-Ardan & Amal, 2020**), across banking, industrial, and telecommunications sectors.

### **General Conclusion from Previous Studies**

The most consistent result across studies is that sustainable leadership is not merely a supportive factor, but rather a decisive and central factor in stimulating green organizational behavior. However, this effect does not occur in isolation; it depends on the organizational context, culture, and incentives, as well as on employees' individual characteristics (values and commitment), and internal psychological mechanisms (empowerment, trust, and identity).

Nevertheless, there remain urgent research gaps, most notably the need to understand psychological and social mediating mechanisms, the scarcity of studies in Arab contexts, and the excessive reliance on cross-sectional methodologies rather than longitudinal and experimental studies that track leadership effects across different levels of analysis.

## **Section Two**

### **Theoretical Framework\*\***

#### **First : Conceptual Framework of the Role of Sustainable Leadership**

- **First: The Concept**

Sustainable leadership is defined as an administrative philosophy and leadership vision aimed at achieving a balance between attention to profits, people, and the environment (Kalkavan, 2015:20), while ensuring the rights of current and future generations, which is a core principle of sustainable development (Al-Tablawi, 2022:1).

Definitions vary to highlight the key characteristics of sustainable leadership. From the perspective of **Hargreaves & Fink (2006:551)**, it is a leadership system that is not tied to specific individuals but is distributed among them, with attention to human and material resources and the building of diverse organizational environments. It is also described as internal concerns focused on building sustainable value that meets economic, social, and ethical requirements (**Iqbal et al., 2020:7**).

**How & Ishak (2021)** refer to leaders' ability to bring about major positive changes within organizations and communities by building trust and inclusive organizational structures. It fundamentally aims to create radical change

in economic and political systems and business models (Visser & Courtice, 2011:1). Finally, it is an ethical leadership behavior aimed at achieving environmental and social outcomes and dealing with complex and interconnected issues such as climate change and inequality (Sajjad et al., 2023:58).

- **Importance of Sustainable Leadership**

Sustainable leadership is considered an urgent necessity to confront the persistent and accelerating challenges faced by organizations, such as market changes, workforce diversity, and shifts in organizational culture. Abdoush (2023:36) summarized its importance as helping to improve performance and productivity through creativity and innovation, enhancing institutional productivity, and making effective use of material and human resources. It also enhances responsibility and satisfaction at all levels, contributes to building organizational culture, and ensures continuity and development. Cook (2014:82) believes that it advances organizational goals in the long term.

- **Characteristics of Sustainable Leadership**

Sustainable leadership is not merely a theoretical concept, but an indispensable necessity for all organizations and institutions operating in societies seeking comprehensive sustainable development. Administrative leaders who apply sustainability principles in their organizations' activities and processes serve not only their organizations but also their countries, in order to achieve genuine sustainable development toward a better life for current and future generations. It is a leadership capable of achieving an effective balance between economic, social, and environmental goals within a framework of excellence and leadership (Al-Tablawi, 2022:3).

1. **Goals:** Orientation toward achieving long-term sustainable progress.
2. **Project Vision:** A clear vision directed toward sustainability.
3. **Responsibility:** The leader is responsible for sustainable development of the community and organization, as well as work groups and employees.
4. **Organizational Culture:** A solid culture oriented toward continuous development.
5. **Group Cohesion:** Collective efforts based on cooperation and mutual support.

- **Challenges**

Studies indicate that the application of sustainable leadership faces several fundamental challenges, most notably resistance by some leaders and employees in universities to change, in addition to the lack of specialized local expertise in this field. Rigid administrative practices and traditional organizational culture hinder the adoption of sustainability concepts, along with the scarcity of qualified individuals capable of providing necessary training and guidance.

These challenges are further complicated by increasing pressure on leaders and employees due to daily routine burdens, limiting their ability to focus on long-term visions. Weak supporting infrastructure is also observed, as the high costs of advanced management systems impede practical application. Finally, some local community organizations and individuals still show reluctance to actively engage with educational institutions to achieve sustainability goals (Al-Husseini, 2021:82).

- **Elements of Sustainable Leadership**

Sustainable leadership includes five basic elements as follows (Habaka & Wazzani, 2022:161):

1. **Diversity:** Sustainable leadership becomes capable of developing multiple innovative solutions and creative ways to adapt to a changing environment. Diversity enhances creativity by bringing different perspectives and knowledge, making every individual important. Unifying work paths is the enemy of sustainability, as task monotony leads to boredom (Lynch, 2016:2).
2. **Organizational Justice:** To achieve long-term prosperity, focusing on organizational fairness creates long-term performance cultures by considering employees' contributions and well-being and benefiting from their commitment. Procedural justice also helps maintain competitive advantage, enhances communication and cooperation, and achieves employee well-being (Tailor, 2020:4).
3. **Ethical Decision-Making:** Develops employees' positive attitudes toward the organization and strengthens commitment and ethics, leading to sustained motivation and performance (Lee, 2017:422–425). Sustainable leadership maintains high ethical standards and plays a pioneering role in achieving social justice within the organization.
4. **Employee Development:** Sustainable leadership views employees as a team needing continuous improvement and training. Human development is crucial for achieving sustainable competitive advantage. Therefore, sustainable leadership prioritizes internal promotion over external hiring and continuously trains employees to perform new and complex tasks successfully (Tailor, 2020:2).

5. **Work–Life Balance:** Sustainable leadership recognizes employees as resources that can be depleted if misused. It emphasizes work–life balance through programs such as remote work, flexible work, and childcare support, improving organizational performance and protecting human resources from burnout (Lee, 2017:422–425).

• **Sixth: Dimensions of Sustainable Leadership**

The literature presents multiple dimensions of sustainable leadership. **Al-Ghamdi (2024:286)** clarified, according to the **Avery and Proter model**, six dimensions as follows:

**First Dimension: Long-Term Perspective**

Sustainable organizations adopt a long-term vision, unlike non-sustainable organizations that focus on short-term results. Balancing long- and short-term requirements is essential but difficult when short-term thinking dominates long-term goals (Kennedy, 2011:9).

**Second Dimension: Organizational Culture**

Sustainable organizations possess strong organizational cultures based on shared values and beliefs among employees and strive to maintain core values even during major procedural or strategic changes (Kantabutra & Avery, 2013).

**Third Dimension: Creativity**

One of the most important leadership skills is the ability to innovate. The absence of competencies increases organizational burdens and deteriorates work quality, while creativity builds trust and adaptability.

**Fourth Dimension: Social and Environmental Responsibility**

Education enhances social cohesion and awareness, and responsibility toward society and the environment is achieved through education and ethical commitment (Khalil, 2023:288).

**Fifth Dimension: Ethical Behavior**

There is growing global awareness of the importance of business ethics. Leaders' ethics influence subordinates' ethics, making leaders responsible for ensuring high ethical standards (David, 2005:20).

**Second: Green Organizational Behavior: Concept, Practices, and Theoretical Dimensions**

**First: The Concept of Green Organizational Behavior**

The past two decades have witnessed a significant increase in interest in the concept of Green Organizational Behavior (GOB), which is considered a manifestation of the shift towards environmentally sustainable management. Ahmed (2024: 45) defined it as "the sum of voluntary or formal behaviors practiced by individuals within an organization with the aim of preserving the environment and reducing the negative impacts of its operational activities." Mansour (2022: 118) argues that this behavior represents a conscious response by the organization to environmental and climatic changes, whereby employees adopt environmentally friendly practices aligned with the institution's strategy. Meanwhile, Hassan (2023: 99) emphasizes that Green Organizational Behavior goes beyond mere compliance with environmental legislation to become an "organizational culture" stemming from individuals' internal conviction and materializing in practical practices such as rationalizing consumption, recycling, environmental innovation, and adherence to green standards in the work environment. Similarly, Ones & Dilchert (2012:103) view it as a specific form of pro-environmental behavior in the workplace.

Consequently, it can be said that Green Organizational Behavior is the sum of individual and collective practices and behaviors that reflect organizational environmental awareness, aiming to protect the environment by performing work in sustainable ways that align with the institution's environmental and social goals.

**Second: The Importance of Green Organizational Behavior**

The importance of Green Organizational Behavior lies in its being a pivotal tool for achieving sustainable development requirements within organizations. It works to integrate economic performance with environmental performance, contributing to achieving a balance between institutional goals and environmental requirements.

Al-Qahtani (2020: 90) clarifies that organizations that adopt Green Organizational Behavior achieve advanced levels of operational efficiency and ensure a sustainable competitive advantage. This behavior also contributes to enhancing the organization's image and raises levels of employee satisfaction and loyalty, due to its connection with ethical and social values. Abdel Moneim (2022: 130) confirms that implementing Green Organizational Behavior in both public and private sectors has become a strategic necessity, especially in light of international commitments related to reducing carbon emissions. He points out that green institutions excel in their ability to adapt to Environmental, Social, and Governance (ESG) standards.

### **Third: Types of Green Organizational Behavior**

Researchers classify Green Organizational Behavior into several types based on its nature and level of application within the organization. Among the most prominent classifications are:

- **Individual Environmental Behavior:** Represents practices adopted by an employee on a personal level, such as rationalizing paper consumption, efficient use of equipment, waste separation, rationalizing energy and water consumption, and adhering to environmental safety procedures (Mansour, 2022: 119). This type forms the core of environmental awareness within the organization and relies primarily on individual values and self-perception of the environment's importance.
- **Collective Environmental Behavior:** This is organized behavior that reflects a shared environmental culture among employees, such as participating in internal cleaning campaigns or adopting green initiatives led by work teams. Al-Rubaie (2022: 76) indicates that this type of behavior often emerges under motivational leadership that creates a supportive environment for environmental responsibility.
- **Institutional (Structural) Organizational Behavior:** This is related to the organization's formal policies and procedures, such as incorporating environmental standards into quality systems, using clean technology, or adopting the ISO 14001 standard for environmental management (Al-Husseini, 2020: 104). This level represents the formal embodiment of sustainability within the organization and reflects the maturity of environmental awareness among top management.

### **Fourth: Factors Influencing Green Organizational Behavior**

The factors affecting the level of green behavior within institutions vary and can be classified into four main axes:

1. **Leadership Factors:** The sustainable leader plays a pivotal role in shaping the environmental awareness of employees. The clear commitment of leadership to sustainability inspires subordinates to adopt green behaviors. Al-Shammari (2020: 53) confirms that "leadership role modeling in environmental behavior is the starting point for any green organizational transformation."
2. **Organizational Factors:** These include internal policies, incentive systems, and training programs that enhance green behavior, as the level of environmental commitment rises with the reinforcement of rewards for positive behavior.
3. **Cultural Factors:** Related to the prevailing values and beliefs in the organization. An organizational culture that places the environment at the core of its identity effectively contributes to creating a green work environment (Abdullah, 2019: 71).
4. **Technological Factors:** Digital transformation and the adoption of environmentally friendly technologies stimulate green behavior. Automation processes reduce resource consumption and support practices such as remote work and reduced commuting.

### **Fifth: Dimensions and Characteristics of Green Organizational Behavior**

Green Organizational Behavior is a fundamental element in achieving institutional sustainability and can be identified through a set of dimensions and characteristics that define its nature and function within the organization:

#### **First: Main Dimensions of Green Organizational Behavior**

1. **The Individual Dimension (Individual Green Behavior):**
  - Reflects each employee's commitment to daily environmental behaviors in the workplace.
  - Includes rationalizing resource consumption (energy, water, paper), using eco-friendly means, and committing to waste reduction.
  - Primarily depends on the employee's self-awareness and environmental knowledge (Mansour, 2022: 119).
2. **The Collective or Cooperative Dimension (Collective Green Behavior):**
  - Represents green behavior at the team or administrative unit level.
  - Includes participation in institutional environmental initiatives, working on recycling projects, and collectively adopting resource rationalization strategies.
  - Linked to sustainable leadership that encourages cooperation and collective motivation (Al-Rubaie, 2021: 77).
3. **The Institutional or Structural Dimension (Organizational Green Practices):**
  - Encompasses the organization's formal policies and procedures that support sustainability, such as integrating environmental standards into quality systems, adopting clean technologies, and adhering to ISO 14001 standards.

○ Reflects the organizational maturity level in applying sustainability and demonstrates top management's commitment (Al-Husseini, 2020: 104).

**4. The Cognitive and Cultural Dimension (Cognitive and Cultural Green Dimension):**

- Encompasses environmental knowledge, values, and beliefs shared among the organization's members.
- Creates a work environment that encourages employees to voluntarily adopt green behaviors.
- An institutional green organizational culture is considered a strong catalyst for sustainable behavior (Abdullah, 2019: 71).

**5. The Motivational Green Dimension (Motivational Green Dimension):**

- Related to motivating employees towards green behavior through rewards and recognition, whether financial or moral.
- Also includes involving employees in decision-making and demonstrating the positive impact of their behavior on the institution and the environment (Al-Qahtani, 2020: 92).

**Second: Fundamental Characteristics of Green Organizational Behavior**

A set of distinctive characteristics of green behavior within the organization can be identified:

1. **Voluntary and Participatory:** Often falls outside the scope of formal job duties and reflects the employee's commitment to environmental values.
2. **Measurable and Evaluable:** Its impact can be monitored through environmental indicators such as energy consumption, waste quantity, or recycling rate (Mansour, 2022: 120).
3. **Multidimensional:** Encompasses individual, collective, institutional, cultural, and motivational dimensions.
4. **Linked to Leadership and Organizational Culture:** The higher the level of sustainable leadership and environmental culture, the greater the employees' commitment to green behavior (Al-Shammari, 2020: 53).
5. **Contributes to Sustainable Institutional Performance:** Enhances operational efficiency, reduces waste, and increases employee loyalty (Al-Ghazali, 2022: 88).
6. **Interactive and Impactful on the Environment:** Has a direct impact on the organization's internal and external environment and reflects its commitment to environmental and social standards.

**Third: The Relationship Between Green Behavior Dimensions (Abdel Moneim, 2022: 123)**

- Individual and cultural dimensions serve as the foundation for green behavior, while institutional and motivational dimensions act as supporters to solidify this behavior.
- The collective dimension reflects the embodiment of these dimensions at the team level and increases the effectiveness of environmental initiatives.
- The interaction between these dimensions enhances comprehensive organizational sustainability and transforms green behavior from an individual practice into a continuous institutional culture.

**Section Three**

**First Preliminary Data Analysis\*\***

This section focuses on the preliminary steps of the statistical analysis of the current research. It includes the coding of the main variables and sub-dimensions, in addition to examining the data collected from the study sample consisting of (65) individuals to ensure their conformity with the normal distribution. Tests were also conducted to ensure the reliability and validity of the measurement instrument used to collect these data, using the software programs **Smart PLS v.4** and **SPSS v.26**, as follows:

**Coding of Scale Items**

The coding of the main variables and sub-dimensions represents one of the fundamental pillars of statistical analysis. This process is necessary to facilitate data entry and processing using specialized statistical software. The coding procedures are presented as follows:

**Table (1): Coding of Main Variables and Sub-Dimensions**

Variable – Dimension	Symbol
Independent variable: Sustainable Leadership	X
Dependent variable: Green Behavior	Y

**Source:** Prepared by the researchers.

**Second: Validity and Reliability Tests**

The researchers conducted face validity tests for the research scale based on the opinions of specialized experts (judges). Content validity was also verified by calculating the internal consistency coefficient (Cronbach’s Alpha) to ensure the reliability of the scale. These tests were conducted as follows:

**1. Face Validity**

To achieve face validity of the study instrument, the researchers presented the questionnaire form to a group of experts (judges) numbering (7) judges (see Appendix 1), with the aim of ensuring the clarity of the questionnaire items and their relevance to the main and sub-variables. Based on the observations and recommendations provided by the judges, the necessary modifications were made, and the questionnaire took its final form, which was distributed to the study sample as shown in **Appendix (3)**.

**2. Reliability Test of the Scale**

After verifying face validity and construct validity of the study instrument, it was necessary to test the reliability of the scale to ensure the degree of consistency of its items with the obtained responses, i.e., to verify internal consistency. This was achieved by calculating the reliability coefficient using **Cronbach’s Alpha**, as shown in Table (2).

**Table (2): Cronbach’s Alpha Coefficients for the Study Scale**

No.	Main Variable	Cronbach’s Alpha
1	Sustainable Leadership	0.8860
2	Green Behavior	0.878

**Source:** Prepared by the researchers based on SPSS v.26 results

Based on the results of Table (2), it is evident that the study scale, with all its main and sub-variables, achieved an acceptable level of internal consistency. Cronbach’s Alpha values ranged between (0.878) and (0.886), all of which exceed the minimum acceptable threshold of (0.70), according to **Sekaran & Boogie (2016)**.

**Two Descriptive Analysis of the Study Data\*\***

This section addresses the descriptive analysis of the studied variables, namely sustainable leadership and green behavior, by extracting several statistical indicators such as the arithmetic mean, standard deviation, and percentages, based on data derived from the research sample consisting of (140) participants, as follows:

**First: Descriptive Analysis of the Sustainable Leadership Variable**

Descriptive statistical indicators were calculated for the sustainable leadership variable. The results shown in Table (3) indicate that the dimensions of this variable achieved an overall arithmetic mean of (3.393), which is higher than the hypothetical mean of (3), given that the study adopted a five-point Likert scale. The standard deviation reached (0.7608), which is a low value indicating homogeneity in respondents’ answers, with a high level of interest amounting to (67%).

These results indicate that the investigated organization has an awareness of the importance of sustainable leadership as one of the key factors that can be utilized to enhance the orientation toward reducing manifestations of green behavior. The items of this variable were also close in their levels of interest, reflecting the importance of each item in the work environment.

**Table (3): Statistical Description of Sustainable Leadership**

	Item Code	Mean	Std. Deviation	Level of Interest
Sustainable Leadership	X1	3.671	73.42	X1
	X2	3.861	77.22	X2
	X3	3.457	69.14	X3
	X4	3.48	69.60	X4
	X5	3.623	72.46	X5
	X6	3.528	70.56	X6
	X7	3.242	64.84	X7

	X8	3.766	75.32	X8
	X9	3.671	73.42	X9
	X10	3.319	66.38	X10
<b>Overall Mean</b>		3.393	<b>67.861</b>	المعدل العام

**Source:** Prepared by the researchers based on SPSS v.26 results.

**Second: Descriptive Analysis of the Green Behavior Variable**

Descriptive statistical indicators were calculated for the green behavior variable. The results shown in Table (4) indicate that the green behavior variable achieved an arithmetic mean of (3.528), which is higher than the hypothetical mean of (3), based on the adoption of the five-point Likert scale. The standard deviation reached (0.795), which is considered low, indicating noticeable homogeneity in respondents' answers. The level of interest in this variable reached (70%), indicating awareness within the investigated organization of the importance of green behavior.

At the item level, the results were close in terms of interest levels and achieved good percentages, reflecting their importance within the organization.

**Table (4): Statistical Description of the Green Behavior Variable**

	Item Code	Mean	Std. Deviation
<b>Green Behavior</b>	Y1	3.4826	0.98209
	Y2	3.2512	1.03186
	Y3	3.5802	0.94066
	Y4	3.5275	1.01404
	Y5	3.3959	1.02191
	Y6	3.2512	1.03186
	Y7	3.4819	1.00257
	Y8	3.3038	1.05161
	Y9	3.4617	1.00314
	Y10	3.3696	1.02421
<b>Overall Mean</b>		0.994633	3.450755

**Source:** Prepared by the researchers based on SPSS v.26 results.

**Third :Testing the Research Hypotheses\*\***

This section is concerned with testing the research hypotheses by identifying correlation and impact relationships between the main and sub-variables of the study.

**First: Testing Correlation Hypotheses**

The correlation hypotheses between the main and sub-variables of the study were tested as follows:

**First Main Hypothesis:**

The sustainable leadership variable is significantly and positively correlated with the green behavior variable at the overall level of the study variables. This hypothesis was tested using SPSS v.26, as follows:

**Table (5): Correlation Test Between Study Variables**

		<b>CS</b>
<b>OS</b>	<b>Pearson Correlation</b>	<b>.765**</b>
	<b>Sig. (2-tailed)</b>	<b>.000</b>
	<b>N</b>	<b>165</b>
<b>**.</b> Correlation is significant at the 0.01 level (2-tailed).		

**Source:** Prepared by the researchers based on SPSS v.26 results.

The data in Table (5) indicate a positive statistically significant correlation between the independent variable (sustainable leadership) and the dependent variable (green behavior) at the overall level, with a correlation coefficient of (0.743) and a significance value of (0.000). Accordingly, the first main correlation hypothesis is accepted.

### Third: Testing Impact Hypotheses

The impact hypotheses between the main study variables were tested as follows:

#### Second Main Hypothesis:

Sustainable leadership has a statistically significant and positive effect on the dependent variable (green behavior) at the overall level of the study variables.

To test this hypothesis, a structural model was built to illustrate the causal path between the two variables (sustainable leadership and green behavior). The results were extracted using **Smart PLS**, as shown in Figure (2) and Table (5).

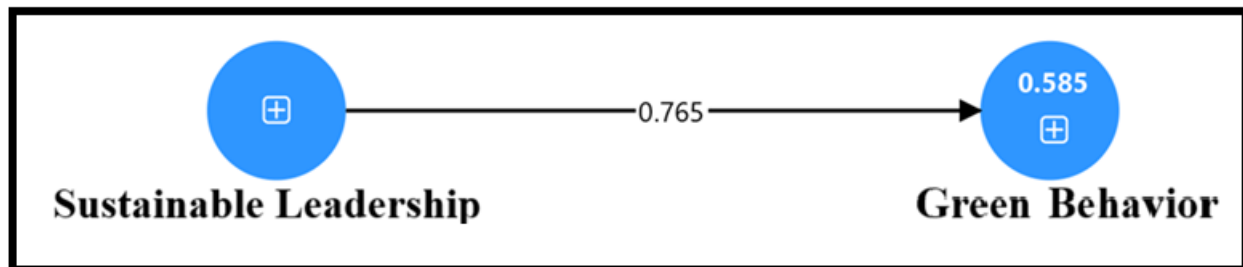


Figure (2): Model for Testing the Main Impact Hypothesis

### Figure (2): Model for Testing the Main Impact Hypothesis

**Source:** Prepared by the researchers based on Smart PLS v.4 results.

The results shown in Figure (2) and Table (5) indicate a positive statistically significant effect of the independent variable (sustainable leadership) on the dependent variable (green behavior) with a coefficient of (0.765) and a significance level of (0.000). This means that green behavior decreases by (76%) with a one-unit increase in sustainable leadership. Furthermore, sustainable leadership explains (58%) of the variance in green behavior, as indicated by the coefficient of determination ( $R^2 = 0.585$ ). Based on these results, the main impact hypothesis is accepted.

## Section Four

### Conclusions and Recommendations

#### First: Conclusions

##### 1. Positive Awareness and Perception:

The results showed that both sustainable leadership and green behavior achieved overall means higher than the hypothetical mean (3), indicating positive awareness and perception among the sample regarding the importance of these concepts in the work environment.

##### 2. Homogeneity of Opinions:

The low standard deviation values for both variables indicate homogeneity in respondents' answers and agreement on the importance of these concepts, enhancing the credibility of the results.

##### 3. Sustainable Leadership as a Key Driver:

- Sustainable leadership achieved a high level of interest, confirming its role as a central factor in enhancing environmental practices within the organization.
- Some sustainable leadership items received particularly high interest, indicating clear leadership practices in sustainability-related aspects.

##### 4. Green Behavior Practiced at a Good Level:

- The average level of green behavior was relatively high, indicating that individuals apply environmentally friendly behaviors noticeably.
- Some green behavior items received higher evaluations, reflecting specific practices such as rational consumption or recycling.

##### 5. Consistency of Results:

The closeness of mean and standard deviation values across items of each variable indicates consistency in respondents' perceptions, enhancing the reliability of the instrument and the stability of the results.

## **Second: Recommendations**

### **1. Enhancing the Role of Sustainable Leadership:**

- Developing training programs for leaders focusing on deepening sustainability concepts and translating them into practical applications.
- Motivating leaders who demonstrate clear commitment to sustainability to disseminate a culture of sustainability within the organization.

### **2. Deepening Green Behavior:**

- Designing internal awareness campaigns aimed at enhancing environmental practices among employees, focusing on aspects that received lower evaluations.
- Providing incentives for employees who adhere to green behaviors to transform awareness into permanent practices.

### **3. Utilizing the Homogeneity of Opinions:**

- Based on the homogeneity of respondents' answers, the results can be adopted as a foundation for developing organizational strategies and policies that enhance sustainability and green behavior.

### **4. Conducting Further Studies:**

- Conducting additional analyses (such as regression analysis or path analysis) to explore the causal relationship between sustainable leadership and green behavior.
- Studying other factors that may influence green behavior to achieve deeper and more comprehensive understanding.

### **5. Continuous Monitoring and Evaluation:**

- Establishing a system for periodic monitoring and evaluation of the level of implementation of sustainable leadership and green behavior to identify changes and take corrective actions.

## **Conclusion**

The analysis reveals a work environment that is aware of and interested in sustainability and green behavior, with opportunities to enhance these aspects through systematic programs and the activation of leadership roles. These results can be considered a positive indicator upon which organizational strategies toward comprehensive sustainability can be developed.

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