

The Impact of Green Transformational Leadership on Developing the Performance of Green Products: A Field Study

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Abstract

The current production date, the current production date, the development of this mode of production. This game explores the development of green products. Besides, this post indicates that there is a positive relationship between green transformative value, and green product development, meaning that green transformative value can not only appear directly on green products positively but indirectly positively. Hence, the Company for Electrical and Electronic Industries (Baghdad – Al - Waziriyah) must increase the green transformational leadership to enhance the development of the performance of green products.

Keywords: Green Transformational Leadership, Performance of Green Products.

Introduction

The success of product performance development lies in creating products whose core features can meet the needs of customers and other internal and external stakeholders. Product stewardship efforts include all aspects of product functions and effects through product life cycle analysis. Since environmental protection is quickly becoming a major issue due to the impact of catastrophic environmental pollution and global warming at present, the General Company for Electrical and Electronic Industries is ready to develop the performance of green products by owning a green transformational leadership. Therefore, the research deals with a group of investigations represented by the research methodology, the theoretical side, the field side, and a set of conclusions and suggestions.

Research Methodology

The research methodology includes the problem, importance and objectives, as well as the research hypothesis and my agencies:

1. The Research Problem: The research problem lies in the knowledge of the General Company for Electrical and Electronic Industries under discussion with the concept of green transformational leadership and the development of the performance of green products and the application of this concept, and there are questions that express the content of the research.

2. The Importance of the Research: The importance of the research comes through the researcher's attempt to provide a theoretical framework that demonstrates green transformational leadership, as most Iraqi organizations need to be in line with international requirements to provide environmentally friendly green products, through a contemporary concept that combines indicators of ideal impact, inspirational motivation and motivation intellectual and individual considerations.

3. Research Objectives: By defining the research problem and its importance, it is possible to define the research objectives as follows:

1. Identifying the level of availability of green transformational leadership in the company under study from the point of view of a number of respondents.
2. Identifying the level of availability of developing the performance of green products in the company under study from the point of view of a number of respondents.
3. What is the level of availability of green product performance development in the company under consideration?
4. Does green transformational leadership, with its dimensions, affect the development of the performance of green products in the company under consideration?
5. Identifying the level of availability of green transformational leadership in its dimensions in developing the performance of green products in the company under study from the point of view of a number of respondents.

4. Research Hypothesis: The research formulates its hypothesis from the questions presented and in line with its objectives according to a main hypothesis that,

(H1: Green transformational leadership has a significant effect on developing the performance of green products. The following branches are derived from it:

H1a: The ideal effect has a significant effect on improving the performance of green products.

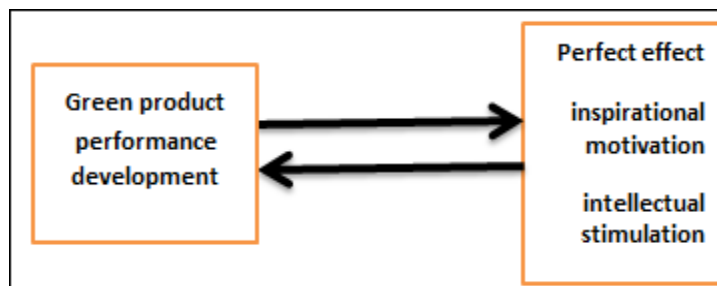
H1b: Inspirational motivation has a significant effect on improving the performance of green products.

H1c: Intellectual stimulation has a significant effect on improving the performance of green products.

H1d: Individual considerations have a significant impact on improving the performance of green products.

Hypothesis:

Green Transformational Leadership



5. The Study Population and Sample: In order to accurately represent the study population, away from bias, a random sampling method was used, where (300) questionnaires were distributed to engineering, administrative and craftsmen workers in the General Company for Electrical and Electronic Industries, for the period (from 15/5/2022 to 15/15). 6/2022), and after (245) questionnaires were retrieved, it was found that the number of valid questionnaires for statistical analysis reached (220) with a response rate of (73%).

The Theoretical Side

1. Concept of GTFL

Green transformational leadership refers to the development of new ideas about green products, green services, green processes, or green practices that are judged (Yu Shan, 2013) from the point of view of (Mittal & Dhar, 2016) that green transformational leadership means Behaviors of leaders trying to create a clear vision to motivate human resources. Researchers agree that human activities in organizations are the main cause of environmental degradation, as green transformational leadership is defined as motivating human resources to acquire new knowledge and make them participate and engage in activities related to the green process and product development that allow the organization to provide green goods or services in the market and improving its performance (Le & Lei, 2018). (Robertson, 2018) believes that the success of environmental efforts depends on the behaviors of leaders and human resources. Leaders interested in integrating environmental management into their business technologies realize the need for a change-oriented leadership style. Green transformational leadership as a critical resource in organizational environmental management (Zhou, et al., 2018).

We conclude from the above that green transformational leadership is a leadership behavior that motivates human resources to achieve the goals of the organization by developing the performance of green products that achieve the organization a competitive advantage, taking into account the surrounding environmental issues.

2. Dimensions of Green Transformational Leadership

Organizations have shown great interest in the concept of transformational leadership and its dimensions, and this is what prompted many researchers and writers to conduct more research and studies to identify dimensions through which transformational leadership behavior can be measured. The researchers began to study green transformational leadership and environmental practices to save the environment, where transformational leadership is a continuous process through which the leader changes the values of human resources and their current motives and transforms them for the good of the organization by formulating a clear future vision that supports the organization's future position. Because of the growing interest in environmental sustainability, researchers have discovered how transformational green leadership can change behavior to be more environmentally friendly and increase environmental performance. The dimensions adopted by (Bass & Avolio, 1995 are the most widely used and later developed by Robertson, 2018) for the purpose of identifying the dimensions adopted by this study as indicators to measure the impact of the deployment of the green quality function on the development of green products through leadership. Green transformational, which aims in particular to improve the performance of pro-environment and are as follows:

1). Perfect Effect

Leaders serve as role models in environmental behavior as they enable human resources to adopt this type of behavior, and they also develop an environmental vision that inspires human resources. Positives in the minds of human resources, which raises their dedication and commitment (Robertson & Barling, 2017).

2). Inspirational Motivation

Some researchers consider motivational leadership as something that is not searchable, as it is considered after inspirational leadership of the innate characteristics of the leader, that is, the personality is nothing but a talent that is not acquired and changed (Avolio & Yammarino, 1991).

3). Intellectual Stimulation

Intellectual stimulation means stimulating human resources to think in new ways to solve problems and use logical thinking before taking any action (Bass & Stidlmeier, 1999).

4). Individual Considerations

In this dimension leaders who show individual considerations based on close relationships with human resources to promote environmental values and demonstrate empathy, as they help them build their capabilities and capabilities (Bass & Avilio, 1994).

3. Improving the Performance of Green Products

Customers are increasingly interested in environmental issues as they become more aware of the devastating toxic environmental waste generated from industrial manufacturing activities around the world. So more customers want to pay more attention to green products, more organizations are redesigning and redeveloping their products into environmentally friendly products. Green product performance development plays an important role in determining sales of green products. Green product performance development can not only establish a differentiation strategy by meeting environmental needs, but also reshape the marketing rules of the market. There are four differences showing the development of traditional products and the development of green product performance, which include a broader consideration of environmental concerns, Focus on product life cycle analysis, focus on design for post-use applications, and focus on the social and environmental impacts of the entire supply chain, so the determinants of green product performance development differ from those of traditional product development. Green product development also plays an important role for organizations to respond effectively to the environmental challenge. Many customers are aware of environmental issues and will not hesitate to take action against organizations that are considered environmentally irresponsible. Besides, customers note the importance of environmental protection such that the consumer environment is more widespread and the environmental regulations are more stringent in the world. Ultimately, the public is eager to buy green products that do not harm the environment. Product development Green is more important for organizations and has become an important part of business management. In the environmental age, organizations must accept environmental protection as their social responsibility, because environmental challenges can become green opportunities that motivate them to adopt. Environmental management in order to enhance its competitive advantages and green image. Previous literature indicates that it is important for organizations to incorporate green ideas into the product performance development process to create a win-win solution for both organizations and society. Product performance improvement will not contribute to the pursuit of sustainability unless it can provide customers with viable "green" product options, as the public has become aware of environmental issues (Chen & Cheng, 2012). A new concept is "Developing the performance of green products", and it is defined as "the development of the performance of products that have less impact on the environment, are less harmful to human health, or are made partly from recycled components, are manufactured in a more energy-conserving way, or are supplied to the market in less packaging." The success of product performance development lies in the creation of products whose essential attributes can meet the needs of customers and other internal and external stakeholders. Product stewardship efforts include all aspects of product functions and impacts through product life cycle analysis As environmental protection is rapidly becoming a major issue due to the impact of pollution. Catastrophic environmental and global warming Nowadays, more organizations are willing to develop green products. The successful development of green products can help organizations move towards environmental sustainability. Green products have become a powerful competitive weapon in the market because more customers are becoming concerned about the environment and more people are willing to pay more for green products (Chen & Cheng, 2012).

The Field Side

Preamble

The main purpose of this research is to obtain the results that the researcher aims to reach, and that reaching the researcher's goal requires going through necessary and basic steps that collectively constitute the applied aspect of the study, and among these steps, ensuring the validity of the data used in the study and then analyzing and

interpreting the responses of the study sample individuals through Statistical description, and finally testing the correlation and influence relationships between study variables, as well as testing the median model for influence relationships between study variables, as follows:

1. Descriptive Statistics

Descriptive statistics deals with the apparent form of the data without studying the relationships or the correlation between them, i.e. the data are clearly tabulated and summarized and can be used to describe the sample's views towards the study variables, their dimensions and paragraphs without recognizing the relationship between the variables from the viewpoint of that sample. The five-point Likert scale was used for the purpose of evaluating the responses and opinions of the study sample, whose values range from (1-5). To achieve the purpose of this census, two of the most common and important tools in this field were used, namely the arithmetic mean, which shows the extent or degree of agreement or disagreement of opinions. The study sample on the existence of the phenomenon on the ground, and the standard deviation, which indicates the extent of dispersion and deviation of opinions about that phenomenon from its arithmetic mean. In addition, the relative importance tool was used for the purpose of identifying the order of the paragraphs of the dimension or the dimensions of the variable by dividing the arithmetic mean by the maximum degree of the scale which is (5). The responses are evaluated according to the arithmetic mean according to the following: 1 to 1.49 "strongly disagree", 1.50 to 2.49 "disagree", 2.5 to 3.49 "neutral", 3.5 to 4.49 "agree" and 4.50 to 5 "strongly agree". The results of descriptive statistics will be discussed first for the paragraphs, then the variables and dimensions as follows:

Descriptive Statistical Analysis of the Independent Variable (Green Transformational Leadership): This variable was represented by (20) items distributed on four dimensions, the arithmetic mean (mean) and standard deviation (S.D) were used for the purpose of evaluating the responses of the current study sample. Table No. (1) shows the obtained results, as follows.

Table 1: Results of Descriptive Statistics for the Independent Variable (Green Transformational Leadership)

Paragraph	Mean	Std. Deviation
What is the value of that public interest	2.7177	1.91026
A leader behaves in an exemplary manner that employees seek to emulate	2.7260	1.02947
A leader acts in a manner that commands the trust, respect and appreciation of employees	2.8230	1.94678
Possesses the ability to persuade employees to increase their enthusiasm for work	3.8852	.83564
It prioritizes building a set of shared values among employees	2.8517	.86714
Perfect effect	2.8038	1.73082
The leader directs the employees to work in a team spirit	3.9091	.88598
It is concerned with motivating employees to achieve the goals and vision of the company	3.9378	.94612
It stimulates the spirit of enthusiasm to work among the employees	3.8325	.90176
Encourages employees to achieve more than they expected	3.8708	.96952
It provides a collective sense of administrative tasks	3.8373	.88380
inspirational motivation	3.8775	.80259
A leader shares with employees their ideas and listens to their perspectives when trying to solve business problems	3.8086	.86698
Encourages all employees to discover solutions to complex problems facing the company	2.8373	1.91059
Constantly trying to find out what employees would like to achieve in their working life.	2.7656	1.01316
Suggests new ways to accomplish work tasks	3.7464	.93428
Allows employees to think about old problems in new ways	2.8086	.89964
intellectual stimulation	1.7933	1.76268
Listens carefully to the opinions of employees and respects their convictions	2.7177	.94142
It treats employees as human beings rather than members of a group	3.8373	.94174
It is concerned with satisfying the personal needs of the employees	2.9139	1.94678
He deals with each employee in an appropriate manner	3.6842	.95866
Shows personal interest in employees who are not accepted by their colleagues	2.8182	1.9536
intellectual considerations	2.7943	.8002
Green Transformational Leadership	3.4211	1.7016

It is clear from the results of the above table (1) that the general arithmetic mean of the green transformational leadership variable reached (3.42) with a deviation A general standard of (1.70), which indicates that the data is homogeneous, which means that the level of green transformational leadership is within a somewhat average level in the company under study according to the respondents' point of view. Which, of course, reflected positively to some extent on their answers. These results, in general, indicate that the company's leadership must possess sufficient capabilities that enable it to motivate human resources, and that the leader acts in an exemplary manner that human resources seek to emulate, and through which he enjoys the trust, respect and appreciation of human resources, and encourages them all to discover solutions to the complex problems facing the company. He constantly tries to identify what human resources would like to achieve in their working life (career) and is interested in satisfying the personal needs of human resources to achieve the company's goals and find common values that would contribute to the development of environmental performance in line with its aspirations.

Descriptive Statistical Analysis of the Dependent Variable (Developing the Performance of Green Products)

This variable was represented by (13) items, the mean (mean) and standard deviation (S.D) were used for the purpose of evaluating the responses of the current study sample. Table No. (2) Shows the results obtained, as follows.

Table 2: Statistical Description of the Variable (Developing the Performance of Green Products)

Paragraph	Mean	Std. Deviation
Green product performance development contributes as a major source of company revenue .	2.7129	1.83429
Improving the performance of green products leads to the development of excellent green products	2.9713	1.83155
Green product performance development continually improves development processes over time	3.8852	.90735
Green product performance development is more innovative in green product development than its competitors.	2.9034	1.83045
The development of green product performance can meet its environmental objectives in the development of green products	2.9522	1.87024
Green product performance development selects the product materials that produce the least pollution to conduct product development or design.	2.9713	1.90359
Green product performance development selects the product materials that consume the least amount of energy and resources to conduct product development or design.	2.8900	1.74830
Green product performance development uses the least amount of materials that make up a product to conduct product development or design.	3.9426	1.73808
Green product performance development will carefully consider whether the product can be easily recycled, reused, and degraded to conduct product development or design	2.7895	1.70961
The operation process developed by the Green Products Performance Development Project effectively reduces the emission of hazardous substances or waste	2.7273	1.85332
The operation process developed by the Green Product Performance Improvement Project recycles waste and emissions allowing it to be treated and reused	2.9234	1.83429
The operation process developed by the Green Product Performance Development Project reduces the consumption of water, electricity, coal or oil	3.7225	1.83177
The operation process developed by the Green Product Performance Development Project reduces the use of raw materials.	2.6890	1.91143
Green product performance development	2.8599	1.59672

Source: Prepared by the researcher using SPSS v.24.

It is clear from the results of the above table (1) that the general arithmetic mean for the variable of developing the performance of green products has reached (2.86), and with a general standard deviation of (1.60), which indicates that the data are homogeneous, and since the general arithmetic mean is less than the hypothetical mean of (3) The level of green product development in the company is below average according to the respondents' point of view.

This indicates that the company does not attach great importance to the development of an environmentally friendly product, and this reinforces the problem of the current study. The company's management is to develop the performance of green products and consider them a major source of revenue and to work on improving the development processes continuously over time, as the development of the performance of green products contributes to using a smaller amount of materials that make up the product to conduct product development or design. And the operating process developed by the green product performance development project reduces Water, electricity, coal or oil consumption, waste recycling and emissions.

2. To Test the Main Hypothesis of the Study

The path analysis test was conducted for the purpose of verifying the direct and indirect influence relationship between the main variables, and thus testing the main hypotheses. With regard to the indirect impact hypotheses tests, the Bootstrapping method was used to extract the Estimate and C.R and the level of significance of those indirect hypotheses (Byrne, 2010; Arbuckle, 2010). This method is more powerful than the Sobel Test method, which fulfills the same purpose. Table No. (3) shows the results that were reached to test the main direct and indirect hypotheses.

Table 3: To Test the Main Hypothesis of the Study

Accept	***	11.426	.013	.416	Green product performance development	<---	Green Transformational Leadership	H1
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Source: AMOS V. 23. outputs

From the Above-mentioned Table, The Following can be Seen

There is a direct and positive effect of spreading the green quality function in developing the performance of green products at the level of significance (0.01).

3. To Test the Direct Sub-hypotheses of the Current Study

The path analysis test was also conducted for the purpose of verifying the direct effect relationship between the dimensions of the main variables of the study, and thus testing the sub-hypotheses.

Label	P	C.R.	S.E.	Estimate	Direct sub-hypotheses path		
Accept	***	8.719	.014	.346	Green product performance development	Perfect effect	H1a
Accept	***	4.970	.018	.200	Green product performance development	inspirational motivation	H1b
Accept	.313	-1.009	.016	-.038	Green product performance development	intellectual stimulation	H1c
Accept	***	8.087	.013	.333	Green product performance development	individual considerations	H1d

Source: AMOS V. 23.

Outputs From the above-mentioned table, the following can be seen:

1. There is a direct and positive effect of the ideal effect in developing the performance of green products at the level of significance (0.01) because (C.R > 1.96).
2. There is a direct and positive effect of the inspirational motive in developing the performance of green products at the level of significance (0.01) because (C.R > 1.96).
3. There is a direct and positive effect of intellectual stimulation in developing the performance of green products at the level of significance (0.01) because (C.R > 1.96).
4. There is a direct and positive impact of individual considerations in developing the performance of green products at the level of significance (0.01) because (C.R > 1.96).

Conclusions and Recommendations

Conclusions

1. The results of the statistical analysis of the current study indicate that the general arithmetic mean is average for the green transformational leadership variable, which indicates that the data is homogeneous, which means that the level of green transformational leadership is within a somewhat average level in the company under study according to the respondents' point of view.

2. The results of the statistical analysis show that the general arithmetic mean is less than the hypothetical mean of the variable green products performance development. This indicates that the data are homogeneous, the level of development of green products performance in the company is below the mean according to the respondents' point of view.
3. We conclude from the results of the current study that there is a direct and positive impact of green transformational leadership in developing the performance of green products. As for the sub-dimensions of transformational leadership, there is a direct and positive effect between (ideal influence, inspirational motivation, intellectual stimulation, individual considerations) and the development of green product performance. This indicates that green transformational leadership enhances the development of green product performance by clarifying the vision and setting high expectations. To perform, and inspire HR with clear goals.
4. The results of the study indicate that the leader is constantly trying to identify what he wants human resources to achieve in their working life (career) and is interested in satisfying the personal needs of human resources to achieve the company's goals and find common values that will contribute to the development of environmental performance in line with its aspirations.

Recommendations

1. We recommend the management of the company under study to have a green transformational leadership that enables it to motivate its human resources.
2. The General Company for Electrical and Electronic Industries can work to increase cooperation and coordination between its divisions in order to achieve the company's goals, especially environmental goals.
3. It is preferable for the management of the General Company for Electrical and Electronic Industries to put in place remedial measures for the waste generated as a result of production operations and not be satisfied with collecting and throwing them.
4. The General Company for Electrical and Electronic Industries can work on developing the creative and innovative skills of employees and participate in training courses to spread environmental awareness, encourage them financially and morally, and provide opportunities for them to participate in developing their ideas and innovations to improve the quality of green products and develop the company's competitiveness.

References

- Avolio, B., Waldman, D., & Yammarino, F. (1991). The four LS of transformational leadership. *Journal of European Industrial Training*, 15 (4), 9-16.
- Bass, B.M and Avolio, B.J (1994). *Improving Organizational Effectiveness through Transformational Leadership*. Sage Publications, Thousand Oaks.
- Bass, B.M., & Avolio, B.J. (1990). The implications of transactional and transformational leadership for individual, team, and organizational development. *Research in Organizational Change and Development*, 4, 231–272.
- Bass, B.M., Avolio, B.J., 1995. *MLQ: Multifactor leadership questionnaire*. Binghamton University, NY (Technical Report) Center for Leadership Studies.
- Chen, Y & Chang, C (2013), Towards green trust: The influences of green perceived quality, green perceived risk, and green satisfaction, *Management Decision*.
- Le, P.B., Lei, H., 2019. Determinants of innovation capability: the roles of transformational leadership, knowledge sharing and perceived organizational support. *J. Knowl. Manage.*, 23 (3), 527–547.
- Mittal, S., Dhar, R.L., 2015. Transformational leadership and employee creativity: mediating role of creative self-efficacy and moderating role of knowledge sharing. *Manage. Decis.*, 53 (5), 894–910.
- Robertson, J.L. (2018). The Nature, Measurement and Nomological Network of Environmentally Specific Transformational Leadership. *Journal of Business Ethics*. doi:10.1007/s10551-017-3569-4.
- Robertson, J.L., & Barling, J. (2017). Toward a New Measure of Organizational Environmental Citizenship Behavior. *Journal of Business Research*, 75, 57-66. doi:10.1016/j.jbusres.2017.02.007
- Yu-Shan Chen, The Drivers of Green Brand Equity – Green Brand Image, Green Satisfaction and Green Trust, *Journal of Business Ethics*, Volume 93, 2010, p. 308.
- Zhou, S., Zhang, D., Lyu, C., Zhang, H., 2018. Does seeing “Mind acts upon mind” affect green psychological climate and green product development performance? the role of matching between green transformational leadership and individual green values. *Sustainability* 10 (9), 3206.