A Proposed Model for Antecedents and Consequences of Green Organizational Culture for Employees in the Public and Private Manufacturing Industry Sectors in Egypt

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Abstract

Currently, there has been an increasing attention paid to employees' behavior in the organization as a driving force of environmental issues. Consequently, organizations are adopting several environmental protection initiatives and developing green organizational strategies. Despite the growth of research in this field, the antecedents and consequences of green organizational culture are still calling for further investigation. In responding to that, this study contributes to the literature by investigating the determinants and outcomes of green organizational culture. This research used a statistical analysis to measure and evaluates how the three antecedents' green human resource, green leadership and green environmental concerns have a positive impact on green organizational culture, Furthermore the significant impact of green organizational culture on green employees' behavior and organization environmental performance. By employing the quantitative research design, the data was collected from 384 respondents as a sample size. A closed ended questionnaire was used to collect data from public and private sectors of the manufacturing industry in Egypt. The Partial Least Squares Structural Equations Modeling technique is used to verify the research framework. The findings confirmed the positive impact of green human resource management, green leadership behavior and environmental concern on green organizational culture. Furthermore, green organizational culture was confirmed to have a significant positive impact on employees' green behavior and organizational environmental performance. This research contributes to the current literature on green organizational culture by examining these impacts and testing them. It also offers guidelines for leadership and decision maker on how to enhance their green human resource, green leadership behavior and environmental concerns to raise their green organizational culture which in consequences maximize employees' green behavior in their organization and subsequently create a culture of environmentally friendly organization.

Keywords: *Green Organizational Culture, Green Human Resource, Green Transformational Leadership, Environmental Concerns-Green Human Behavior, Environmental Organizational Performance.*

Introduction

Nowadays, companies adopted the concepts of green industry and they expand broader to green human resource(Karatepe et al., 2022), green organizational culture(Yeşiltaş et al., 2022) and adjusted by the concept of green employee's behaviors (Sabokro et al., 2021).

In recent years, it has been noticed that the major causes of environmental problems are human destructive activities which cannot be ignored (Saleh & Al-Swidi, 2019). They, therefore, appreciate those employees who show environmentalists in the true sense. Such employees work towards maximizing the positive im-

pact of workplace activities in a corporate environment (Woo & Kang, 2021). They also support activities that involve protection of the environment and the conservation of natural resources (Olson et al., 2020).

According to social movement theories is an environmental collective behavior with an action taken by a group of the society to solve environmental challenges (Thiri et al., 2022).

Moreover, the environmental preservation has become serious in recent decades. Almost every organization and industry are bond to comply to do no harm the environment.

Manufacturing industrial companies are exerted effort to minimize waste and to dispose of it in their production process in order to achieve a better organizational environmental performance.

There are two main reasons behind applying the research on Manufacturing Industrial companies. Firstly, to overcome the pollution of air, water resource and soil. Secondly, it is to offer a stringent environmental protection for such organization.

Theoretical Background

Green Organizational Culture

Green organizational culture may be described by other terms as pro- environmental culture, green consciousness, eco-friendly culture and sustain ability culture (Roscoe et al., 2019) .

Green organizational culture defined as the beliefs, values and behaviors of the organizational members regarding the environment natural (Rizvi & Garg, 2020).

Recent study found that organizational culture has a significant positive impact on employee behavior (Al-Swidi et al., 2021).

Environmental Concerns

Environmental concerns or an attitude is known as a general perception about various environmental problems. It is also referring to the influence and actions of a people regarding environmental hazards (Cruz & Manata,2020).

Green environmental concerns refer to individual's emotional point of view regarding the environment. Environmental concerns involve environmental values, beliefs and attitudes (Hoffmann et al., 2022).

Green Human Resource Management

Green human resource management provides a training strategy to promote environmental awareness, assist their employees to learn more about the environmental protection techniques, and also encourage employees to take part in an environmentally green organizational culture (Nisar et al, 2021).

Green human resource management refers to green job design, green job analysis, green recruitment and selection, green training and development, green compensation, green performance, green labor relation, green health and safety and green employee involvement (Shah, 2019).

In some organizations, environmental management has been linked to human resource, termed as Green human resource management, or environmental human resource management. (Parida et al., 2021). Green human resources management activities are illustrated in four step model (Kodua et al., 2022).

Green human resource management Offer environmental vision to the human resource, encourage the sharing of environmental goals among employees, devise methods for evaluating the environmental organizational performance, give incentives and rewards to employees who achieve exceptional environmental performance (Amrutha & Geetha, 2020).

Green Transformational Leadership

Employees green behavior that influences and motivate their followers to perform beyond the expected levels of organizational environmental level and inspires them to achieve environmental goals (Sing et al., 2020**).**

Green transformational leaderships should guide, support and infuse their subordinates by a sense of belonging. (Farrukh et al., 2022).

Green Transformational Leadership is able to assist employees to refine their thoughts, support employees and motivate them to deal with challenges and influence their performance (Kusi et al, 2021). Despite the green transformational leadership is a prime organizational component, individual antecedent like green human resource and transformational leadership and environmental concerns

Employee Green Behavior

Employee green behavior defined as the behavior and attitudes of an individual and groups that contributes to the sustainability of the environment in the context of wor (Aboramadan et al., 2021).

Employees green behavior includes activities like recycling or any other behavior that seek to reduce the negative impact on the environment (Wood et al., 2021).

Any behavior which has a positive impact on the environment is termed as green behavior or pro-environmental behavior (Aboramadan et al., 2021).

Employee green behavior becomes a crucial important component in an organization to help in preserving their environment in its operational activities (Unsworth et al., 2021).

The pro- environmental behavior of employees, termed as employees' green behavior, based on their environmental concerns efforts toward the preventive activities that can eliminate environmental hazards (Aboramadan, 2021).

Organizational environmental performance

Organizational environmental performance refers to how organizations perform their operations in a way that positively affects the environment (Galliano & Siqueira, 2021).

The organizational environmental performance is based on the level of pollution emissions caused by the organization (del Rosario et al., 2019).

Research Problem

The research attempts to give answers to the following research questions:

- How is green organizational culture and its antecedent's green human resource, green transformational leadership and environmental concerns influence green employee's behavior and organizational environmental performance.

- Despite the attention paid to the topic of organizational green behavior, the antecedents of this culture and how it is affected by green human resource management, green transformational leadership, and environmental concerns is still under discussion. (Anwar et al., 2020)

- A research gap also exists in the research joint effect of these factors in private and public Industry sectors.

- The research aims to address these gaps in the literature and investigate how the proposed model could impact the environmental performance and green employee's behavior in both public and private Industry sector in Egypt.

Research Objectives

This study aims at investigating the impact of green human resource management, green transformational leadership, and environmental concerns on the formation of green organizational cultures and its subsequent impact on employee's green behavior and organizational environmental performance in manufacturing industry at both public and private sector.

Literature Review and Hypotheses Development

Environmental Concerns and Green Organizational Culture

Previous researcher upheld those environmental concerns can influences employee's attitudes that will lead to perform a green organizational culture (Bulińska-Stangrecka & Bagieńska , 2021).

The environmental concerns affect the green organizational culture because they show commitment to ecology and sustainability in order to reduce damage.

When management takes pro-environmental measures that complies with expectation and social pressure. Similarly, employee's pro-environmental practices meet the expectation of the organization. Thus, the combined effort of both employees and management can make a great impact on environmental preservation.

Environmental concerns in the organization should be incorporated and institutionalized into organizational norms, values and practices, thus developing a powerful organizational green culture.

From the above, we can conclude that environmental concern is positively impact green organizational culture to determine all the long- and short-term plans (Paille et al., 2020). Accordingly, hypothesis there would be proposed as follows:

H1. There is a positive significant impact of the third antecedent Environmental concerns on the formation Green organizational culture.

Green Human Resource Management and Green Organizational Culture

Recent study concluded that there was a positive significant impact between green human resource management on green organizational culture and organizational environmental performance (Roscoe, 2019).

The green human resource management plays a key role in helps green organizational culture for it shapes employee's values, behaviors and beliefs through the process of green practices and activities (Pellegrini, 2018).

Green human resource management assist organizations to accomplish goals through create a green organizational culture, green employee's behavior and a green environmental performance (Kim et al., 2019). Green human resource management activities influence the pro environmental employee's behavior through the development of organizational green culture (Muisyo, 2021).

Employees who are compensated and trained for being involved in pro- environment activities ultimately assist, promote and develop green culture in the organization (Roscoe, 2019).

Green human resource management should aim to cultivate a green organizational culture at all levels and every step by enhance the awareness about improving understanding environmental issues and reducing environmental problems (Margaretha, 2013).

Green human resource management can promote green organizational culture at both industrial and organizational levels. GHRM should communicate to employees the urgency of implementing green organizational culture, and also create environmental programs with incentives and rewards and informed them by the new

aligned goals concerning environmental protection (Labella-Fernández & Martínez-del-Río, 2019). Accordingly, hypothesis first would be proposed as follows:

H2. There is a positive significant impact of the first antecedent Green Human resource management on the formation of Green organizational culture.

Green Transformational Leadership and Green Organizational Culture

In order to understand green organizational culture, green leadership must provide their subordinates with beliefs, values and green behavior (Sun et al., 2022).

Transformational leaderships have a strong significant impact on green organizational culture by motivates their subordinates and influences them to develop innovative ideas.

Previous study confirmed the important role of green transformational leadership in promoting the organizational culture and identity that affect green employee's behavior and organizational performance (Robertson, 2013).

The literature of green leadership behavior, may not directly influence green employees' behavior, rather this influence might be through green organizational culture (Rehman et al,2021).

According to previous research green transformational leadership have a great impact on environmental organizational performance (Sun et al., 2022). In regard of implementing the green industry through employee green behavior, so organizations need a leader who cares about the environment. Accordingly, hypothesis two would be proposed as follows:

H3. There is a positive significant impact of the second antecedent Green transformational leadership on the formation green organizational culture.

Green Organizational Culture and Employee Green Behavior

Employee green behavior in an organization can be formed by green leadership and green organizational culture, it is expected that employees should be able to fulfill the responsibilities well and on time. Furthermore, previous literature has proved that green organizational culture might help in implementing green employee's behavior successfully (Fernandez et al., 2003).

Previous studies proved that values and morals as a part of green organizational cultures have a strong impact on employees' green behavior (Yeşiltaş et al., 2022). The organizations must develop green organizational culture in order to achieve successfully environmental practices. (Tariq et al., 2016) The previous study confirmed the crucial of green organizational culture in promoting employees. Previous study confirmed the crucial of green organizational culture in promoting green employees' behavior (Wang et al.,2019). Green organizational cultures exert pressure on employees to exempt them to behave according to culture values. Sharing green beliefs and values in the organization could encouraging environmentally friendly management performance and also shape the behaviors and perceptions of employees in the organization. Accordingly, hypothesis four would be proposed as follows:

H4. There is a positive significant impact of The Green organizational culture and its antecedents on Employees Green behavior.

The Green Organizational Culture and Organizational Environmental Performance

Environmental organizational performance may be achieved when the organization redesign its productive process, minimizes wasted resources in order to encouraging Green organizational Culture to be sustainable for the economic health of the organization. Previous study confirmed the crucial of Green organizational Culture in promoting Organizational environmental performance (Wang et al., 2019). Accordingly, hypothesis five would be proposed as follows:

H5. There is a positive significant impact of The Green organizational Culture and its antecedents on Organizational environmental performance.

The following figure.1 represents the study's model, designed to test the research relationships.
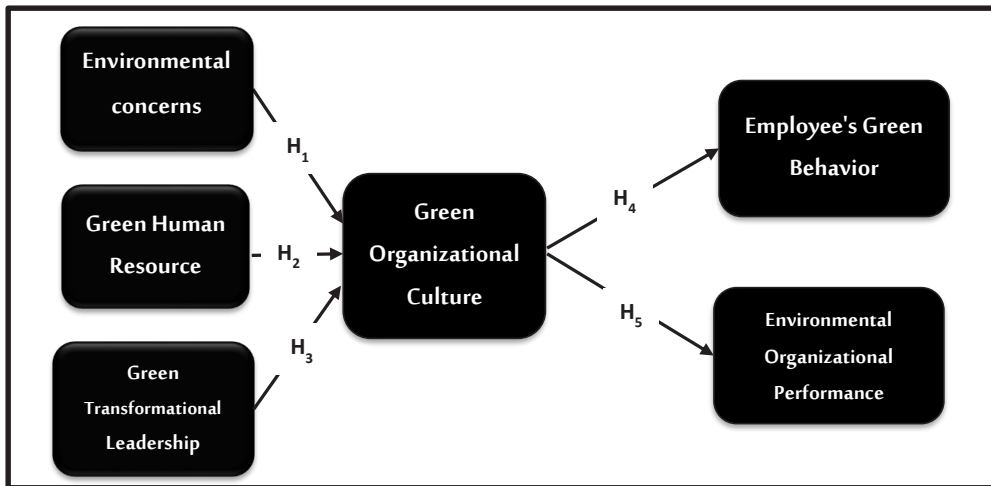
Fig. 1. Hypothesized Research Models

Methodology

Data Collection and Sample Size

Data were collected from industrial companies in Egypt. Since the number of employees in the public and Private Manufacturing Industry sectors is large, the sample size of 384 was calculated using the Morgan equation. The statistical community consists of all employees and managers of human resources departments in the Egyptian industries, and the questionnaire was distributed randomly among them. Participating companies were accurately informed of the purpose of the study to ensure their maximum response to the survey.

To avoid any potential bias/variance due to singularity of the measurement, Harman's Single Factor Common Method Variance test was performed, where only one constant factor extracted from the main constructs should account for less than 50% of the variance. The results showed that one component could account for 42.3% of the variance, which is less than the maximum of 50%. The results also confirm the absence of a significant association between the variables, indicating the absence of a common method bias as suggested (Bagozzi et al., 1991). All variables were modeled on a 5-point Likert scale, ranging from 1 (strong disagreement) to 5 (strong agreement).

Definition and Measurement of the Constructs

The questionnaire was designed and constructed according to the previous literature. Before collecting the data, the researchers enlisted the services of several experts in evaluating the questionnaire in terms of readability, clarity, perception and reliability of the content. Then, the questionnaire was randomly distributed to the companies. The targets were HRM employees and managers, as well as conservation managers. Respondents were asked to fill out the forms and submit them within two weeks. The questionnaire is structured in two sections. The first section represents descriptive information about the employee, while the other sections relate to Study variables, Environmental Concerns, Green Human Resource Management Green Transformational Leadership, Green Organizational Culture, Employee Green Behavior, Organizational environmental performance. Structures measurements are further defined as follows.

1- **Environmental Concerns**: This was measured using the Seven-item scale developed by Huang et al., (2014). A sample item was "I follow the key points of recycling and classify recycled waste at home"

and "I am often concerned about and absorb environmental knowledge and information.

2- **Green Human Resource Management**: To measure GHRM, a five-item scale developed by Dumont et al. (2017) was used. Sample items are "The company designs its green goals for employees" and "The company rewards the employees' green behaviors."

3- **Green Transformational Leadership**: This was measured using the Six -item scale developed by (Chen & Chang, 2013). A sample item was "The leader of the green innovation company inspires the company members with the environmental plans ". and "the leader of the green innovation company acts with considering environmental beliefs of the company members".

4- **Green Organizational Culture:** To measure GOC, a Six -item scale developed by Wang (2019) was used. Sample items are "Our company makes a concerted effort to make every employee understand the importance of environmental preservation" and "Our company links environmental objectives with our other corporate goals".

5- **Employee Green Behavior:** To measure EGB, a five-item scale developed by Iqbal et al. (2018) was used. Sample items are "I do my professional tasks in a way that positively affects the environment "and "I feel responsible for preserving the environment for the next generation'.

6- **Organizational Environmental Performance:** To measure OEP, a Ten-item scale developed by Kuhl et al. (2016) was used. Sample items are "Seeks to reduce energy consumption per product produced." and "Uses recyclable/biodegradable packaging".

The Data Analyzed

The data were analyzed using partial least squares structural equation modeling (PLS-SEM) to test the hypothesized model of the study (Hair Jr et al., 2016). It is considered appropriate because it is compound-based (or variance-based) rather than factor-based (or covariance-based). Specifically, the PLS-SEM was selected to examine the study model for the following reasons. First, most constructs in applied science research are designs that can be best handled by the complex scaling model, the contrast-based SEM (Henseler, 2017). Second, PLS-SEM estimates are a vehicle-based model, so they produce consistent estimates because they allow the combination of explanatory and predictive perspectives of exploratory research (Hair Jr et al., 2016). Third, it is preferable to use PLS-SEM to avoid estimation bias due to the unknown nature of the data because it does not require the normality of the data (Hair Jr et al., 2016). Fourth, PLS-SEM can be used to perform multi-group analysis Therefore, Smart-PLS version 3.3.2 was used to perform the analyzes (Hair Jr et al., 2016) and a multi-group analysis was performed to compare the complexity and map the inter-structural relationships between factors that influence the green behaviors of public and private sector employees.

Analysis and Results

Sample Profile

Table 1 shows the respondents' demographic distribution. Regarding gender, 81% were female and 19% male. 75% have work experience of more than five years; 52% work in the public sector, and 48% in the private sector.

Measurement Model Assessment

We estimated the weights of the Study factors to check for internal consistency. **Table 2** displays, all

Table (1) Sample Profile

Variable	Category	Frequencies	%
Gender	Men	311	**81%**
	Women	73	**19%**
Total		384	
Experience	Less than 5 years	96	**25%**
	Between 5 and 10 years	153	**40%**
	Between 10 and 20 years	80	**21%**
	More than 20 years	53	**14%**
Total		384	
Education	No certificate	96	**25%**
	Secondary or less	145	**40%**
	Bachelor	81	**21%**
	Postgraduate	54	**14%**
Total		384	
Sector	Publica	200	**52%**
	Private	184	**48%**
Total		384	

weights reached a threshold value of 0.70 (Hair Jr et al., 2016). However, we removed many items because they did not reach the specified threshold value of 0.70.

Table (2) Outer Loading of the Measurement Model

Cod	Items of the Construct	Outer Loadings
EC	**Environmental Concerns**	
Q1	When two products are similar, I tend to select the one that harms the environment less, even though it is more expensive	0.765
Q2	If the products sold by the firms seriously damage the environment, I will refuse to purchase them.	0.896
Q3	When purchasing products, I always select the ones with environmental certification, even though they are more expensive.	0.768
Q4	I follow the key points of recycling and classify recycled waste at home.	0.756
Q5	I am concerned about my actions to improve the environment.	0.871
GHRM	**Green Human Resource Management**	
Q6	The company designs its green goals for employees.	0.761
Q7	The company provides green training for improving green values.	0.815
Q8	The company uses the employees with green education to develop knowledge and skills required for green management.	0.807
Q9	The company rewards the employees' green behaviors.	0.768
Q10	My company considers employees' workplace green behaviors in promotions.	0.810
GTL	**Green Transformational Leadership**	
Q11	The leader of inspires the members with the environmental plans.	0.842
Q12	The leader of provides a clear environmental vision for the company members to follow	0.819
Q13	The leader of the gets the company members to work together for the same environmental goals	0.700
Q14	The leader of the encourages the company members to achieve the environmental goals	0.847
Q15	The leader of the acts with considering environmental beliefs of the company members	0.800
Q16	The leader of the stimulates the company members to think about green ideas.	0.861
GOC	**Green Organizational Culture**	
Q17	Our company makes a concerted effort to make every employee understand the importance of environ-mental preservation.	0.702
Q18	Our company has a clear policy statement urging environmental awareness in every area.	0.739
Q19	Environmental preservation is a high priority activity in our company	0.810
Q20	Preserving the environment is a central corporate value in our company	0.787
Q21	Our company links environmental objectives with our other corporate goals.	0.812
Q22	Our company develops products and processes that minimize environment impact.	0.713
EGB	**Employees' Green Behavior**	
Q23	I do my professional tasks in a way that positively affects the environment.	0.865
Q24	I feel responsible for preserving the environment for the next generation.	0.748
Q25	I try to engage, educate and inspire people to minimize environmental footprints.	0.726
Q26	I try to engage in behaviors and initiatives that reduce environmental footprints.	0.811
EOP	**Environmental Organizational Performance**	
Q27	Seeks to reduce water consumption per product produced.	0.712
Q28	Seeks to reduce the material consumption per product produced.	0.767
Q29	Seeks to reduce energy consumption per product produced.	0.815
Q30	Replaces conventional energy sources for energy from renewable sources (clean).	0.809
Q31	Seeks to decrease the use of packaging materials.	0.792
Q32	Develops actions to reduce the amount of waste generated in the production process.	0.844
Q33	Diffuses the practice of recycling in their operations.	0.811
Q34	Uses recyclable/biodegradable packaging.	0.755
Q35	Adopts practices that aim to reduce the emission of gases (greenhouse and acids).	0.788

The Measurement Model Evaluation evaluates two factors of discriminant validity and convergent validity. Convergent validity was defined as "the degree to which indices of a given construct converge

or share a high proportion of variance" (Hair Jr et al., 2016). We evaluated composite reliability (CR) and Average Variance Extraction (AVE) as two components of converging validity assessment as suggested by Hair Jr et al. (2016).

Table 3 displays that the CR and AVE values exceed the 0.70 and 0.50 threshold points, respectively. These figures are adapted from Hair Jr et al., (2016). Hence, we confirmed the reliability and validity of the convergence of these constructs.

We also ascertained discriminative validity through what was recommended by Fornell and Larcker (1981), "The average amount of covariance between each construct and its components should be higher than the covariance between the same construct and other constructs." The results indicate that the full set of constructs achieves. " Discriminant validity" is sufficient, as the square root of AVE (diagonal) exceeds correlations (off-diagonal) for the entire set of constructs (**see Table 4**) (Fornell and Larcker, 1981).

Table (3) Construct Reliability and Validity

Variables	Cronbach's Alpha	rho_A	Composite Reliability	AVE
EC	0.873	0.880	0.908	0.664
GHRM	0.871	0.874	0.907	0.660
GTL	0.890	0.912	0.919	0.695
GOC	0.870	0.887	0.906	0.659
EGB	0.853	0.877	0.900	0.645
EOP	0.820	0.845	0.876	0.523

Note: **EC** = Environmental Concerns, **GHRM** = Green Human Resource Management, **GTL** = Green Transformational Leadership, **GOC** = Green Organizational Culture, **EGB** = Employee Green Behavior, **EOP** = Organizational environmental performance. Average Variance Extraction (**AVE**).

Table (4) Discriminant Validity Using the Fornell-larcker Criterion

Variables	M	SD	EC	GHRM	GTL	GOC	EGB	EOP
EC	3.095	0.770	**0.815**					
GHRM	4.424	0.620	0.658	**0.813**				
GTL	4.009	0.835	0.446	0.711	**0.833**			
GOC	3.737	0.827	0.433	0.456	0.522	**0.812**		
EGB	3.560	0.987	0.623	0.613	0.667	0.667	**0.803**	
EOP	3.171	0.812	0.536	0.643	0.617	0.536	0.723	**0.723**

Note: Mean=M, Standard Deviations=SD. The Square Root of AVEs the boldface numbers on the diagonal line.

Valuation of the Structural Model

With regard to evaluating the structural model, it is fundamentally important to evaluate the issues related to the problem of internal linear correlation. I recommend (Hair Jr et al., 2016) that a variance inflation factor (**VIF**) should be less than 5, or 3.3 according to (Diamantopoulos and Siguaw, 2006). in this study, results indicate that the endogenous VIFs for all independent variables were 1.453, 1.656, and 1.876, for EC, GHRM and GTL, respectively. All these values are less than 3.3. This consequently confirms the non-existence of Collinearity.

Table 5 displays that EC, GHRM and GTL have a significant positive effect on GOC [(β=0.329, p-value<0.001), (β=0.344, p-value<0.001) and (β=0.165, p-value<0.001), respectively]. It also confirms that the GOC have considerable positive influence on EGB and EOP [(β=0.335, p-value<0.001) and (β = 0.351, p-value <0.001), respectively].

We tested the predictive validity of the proposed model for the study using R^2, which is a common measure on which the Predictive Relevance of the model is evaluated, and this parameter represents the combined effects of all independent variables on the dependent variables. It is clear from Table 4 that the value of R^2 for the GOC variable is 0.506, which means that EC, GHRM and GTL contribute to explaining 50.6% of the variance in GOC, and then it can be said that 49.4% of the variance in this variable can be attributed to other factors. It is also shown that the R^2 of the EGB variable is 0.318, which means that the GOC contributes to explaining 31.8% of the variance in the EGB. It is also shown that the R^2 of the EOP variable is 0.225, which means that the GOC contributes to explaining 22.5% of the variance in the EOP. This is evidence of predictive accuracy, given that the value of R^2 was higher than the recommended minimum of. 0.10 (Fornell and Larcker, 1981).

In addition to R^2, we used the predictive relationship indicator Q^2, which is effectively used as a prediction criterion. Q^2 shows how well the data collected experimentally can be recombined with the help of the model. Q^2 is generally estimated using an omission distance. The Q^2 values of 0.142, 0.012, and 0.110,

which are If $Q^2 > 0$, indicate that the observed values are fairly reconstructed, and the model is adequately relevant in terms of predictions.

We measured the value of f^2 to find out the size of the effect and to reveal the extent to which the indepen-

Table (5) Path Coefficients and Hypothesis Testing.

NO.H	Hypothesis	Coefficient	Std Error	t-Value	R^2	f^2	Q^2	Decision
H1	EC —> GOC	0.329	0.053	6.364a		0.158		Supported
H2	GHRM —> GOC	0.344	0.059	6.090a	0.506	0.178	0.142	Supported
H3	GTL —> GOC	0.165	0.047	2.945a		0.175		Supported
H4	GOC —> EGB	0.335	0.062	6.716a	0.318	0.367	0.012	Supported
H5	GOC —> EOP	0.351	0.067	4.889a	0.225	0.472	0.110	Supported

a p-value < 0.001.

dent variables contribute to the dependent. According to Cohen (1988), values of 0.35, 0.15, and 0.02 for f^2 are, respectively, considered large, medium and weak in terms of effect sizes. Where the results of **Table 5** display the f^2 value (0.158, 0.178, 0.175) for EC, GHRM and GTL indicates that it has a medium effect on GOC. The f^2 (0.367) of GOC shows that this variable has a large effect on EGB. The value of (0.472) for the GOC indicates that they have a large effect on EOP.

Discussion

The research provides a valuable insight not only for theoretical framework but also from the management   perspective.

The research is one of the first attempts to investigate the impact of green organizational culture and its antecedents' green human resources, green transformational leadership and environmental concerns and its subsequent impact on Employees green behavior and organizational environmental performance.

This research supports the impact of green human resource management, green transformational leadership and environmental concerns on the formation of green organizational culture.

Based on resource-based theory, this research empirically proved that the public and private sectors proved that the company involved in natural resources.

The manufacturing industry is interested in economic growth and environmental protection from the perspective of sustainable development. In view of this green human resource management, green transformational leadership and environmental concerns in manufacturing industry should promote green organizational culture that has a positive impact on green organizational performance and green employees' behavior, in this way employees will become aware by the fact of if we care for the environment, we will leave a best planet for future generation.

Theoretical Contribution

The aim of the research is to offer a level of awareness to green organizational culture and to analyze the impact of its antecedents as green human resource management, green transformational leadership, and environmental concerns on green organizational culture directly and on green organizational behavior and environmental organizational performance indirectly.

It contributes to the literature in several ways. Firstly, confirm the direct impact of green human resource management, green transformational leadership and environmental concerns on the formation of green organizational culture. Secondly, support the positive impact of green organizational culture on green employee's behavior and organizational environmental performance. Third the research validates the appropriateness of the proposed model in explaining the impact of the determinant of green organizational culture on its consequences employee green behavior and organizational environmental performance across private and public sectors.

This research contributes to the literature by demonstrate the determinants of green organizational cultures and its subsequent in a manufacturing industry in both private and public sectors.

The research contributes to the literature as green culture is seen as a predictor of green environmental performance and employee's green behavior in the present of its antecedent's green human resource management, green leadership and environmental concerns. This research reinforces these findings and paves the way for manufacturing industry to promote green organizational culture.

Finally, it is clear that the green organizational cultures and its antecedents and consequences is still under investigation especially in developing countries, so this research provides an empirical study of the topic to manufacturing industry in Egypt.

Conclusions

The research main findings proved that the green human resource management, green leadership and environmental concerns are important variables in developing a green organizational culture that helps in promote the green employee's behavior towards improving environmental organizational performance.

The research found that organizations in the field of manufacturing industry should develop green organizational culture to shape employee's behavior and enhance their awareness about environmental problems and reach high level of environmental concerns.

In brief, this research aims to examine the joint effect of green organizational culture and its determinate green human resource management, green transformational leadership and organizational concerns in the formation of green employees' behavior and environmental organizational performance.

Finally, the research found that both public and private sectors can play a crucial role in environmental protection if they choose to adopt effective Green human resource, effective leadership and environmental concern to formulate green organizational culture which enhances green employee's behavior and organizational environmental performance.

Research Recommendations

In regarding to this research, participation level should be increased; Furthermore, the research findings suggest that private and public organizations need to carry the responsibilities for environmental protection

The researcher suggests that for any organizations in order to develop employee's green behavior and enhance their organizational environmental performance, all their green human resources practices and policies should be affected in creating green organizational culture (Muisyo,2021)

It is important that these types of organizational variables can be applied to longitudinal study designs, allowing to long term comparisons of the results.

Future researches may replicate this research in other region and countries across specific green culture values and across different sectors of operations.

Finally, future researchers may consider a mediating effect of other variables as green dynamic capabilities.

Research Limitations

As in any researches, there are limitations to be considered in the future researches.

- **First**, the research applied the study on manufacturing industrial companies however they are not the only industry that has the potential to pollute the environment; there are several businesses as hospital in the health care sector.

- **Second**, a cross-sectional study was applied, that refers to the data is collected in a single period of time.

- **Third**, it is crucial to broaden the sample size and replicate the study in other business sectors in order to have more solid results.

- Fourth, to understand the dynamic nature of these, future researches may adopt a longitudinal methodology to investigate in depth changes in performance and behavior.

- **Fifth**, this research is applied on the manufacturing industry in public and private sector in Egypt, as Egypt is moving toward implementing green initiatives toward better environmental protection.

- **Finally**, this research used a quantitative approach, which provide a limited information, so future research may use a mixed method to gain greater understanding the antecedents and consequences of green organizational culture.

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