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The Effect of Waste Management on Green Production Practices: The Mediating Role of Green Self-Efficacy

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ABSTRACT

This study investigated and demonstrated that the management of green production practices can have a positive impact on industrial organizations' productivity by acting as a mediator for green self-efficiency, which is a necessary trend in protecting the environment from pollution and waste generated by the manufacturing process, considering the technological acceleration and challenges faced by those organizations from environmental pollution. The study used a questionnaire comprised of 13 items with a sample size of 60 drawn from various departments of the factory to best serve the study's goals. The study used SPSS.vr.26 statistics software, and AMOS.vr.26 to test a set of hypotheses, and a set of statistical procedures respectively. It was determined that radical changes needed to be implemented to best serve the goals of producing environmentally friendly products. Finally, the research provided a set of conclusions and suggestions.

1. Introduction

There has been a dramatic rise in the number of organizations that have taken administrative measures regarding environmental procedures and policies in response to environmental pressures because of industrial activity (Guo et al., 2019: 3). There is also a rising awareness of the need for environmentally friendly methods, which has compelled businesses to conduct their operations in an ethical and socially responsible way. Because pollution and waste are major issues in most nations, this research is relevant since it focuses on a subject that has the potential to have a significant impact on the environment. When gathering data and information for the study's application, the researchers used a questionnaire method, and their findings were organized into four sections: a review of their methodology and a discussion of the theoretical framework and variables they used, to lay a solid foundation for future research. The third subject dealt with the statistical component of the investigation, and the study closed with the fourth topic framing the results found and suggestions inspired by the conclusions made.

We can clarify the study's problem by:

- What is the factory's degree of green manufacturing practices?
- How does waste management influence green self-efficacy?
- What does the relationship between green self-efficacy and green production practices?
- How does green self-efficacy influence the relationship between waste management and green manufacturing practices?

As a result, the research challenge focuses on the degree to which waste management affects green production practices through the mediating role of green self-efficiency in the factory.

2. Significance of the Study

This study is significant because it deals with the dynamic topic to produce environmentally friendly products and achieve a prosperous economy with the least environmental impact, as most countries face the problem of pollution and waste, which has resulted in environmental damage, as well as being:

- An enrichment stage to determine the truth and degree of green manufacturing practices.
- An effort to call attention to the need of embracing it as a philosophy to establish a flourishing economy and a secure society.

3. Study Objectives

The objectives of the study can be summarized in the following points:

1. Shedding light on the concept of waste management as a philosophy to ensure the disposal of waste.
2. To reveal the level of green production practices in the factory.

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3. Examine the effect of waste management on green production practices throughout the mediating role of green self-efficiency in the factory.
4. "Examine the role of green self-efficacy in the relationship between" waste management and green production practices.
5. Study and analysis of the relationship between waste management and green production practices throughout the mediating role of green self-efficacy.

4. Literature Review

4.1 Theoretical part

4.1.1 Waste Management

Most human activities are responsible for the majority of waste generated (Brunner & Rechberger, 2014). There has been a recent rise in the volume and variety of industrial waste (Vergara & Tchobanoglous, 2012) as well as the rates at which it is created. In the sixteenth century AD (Wilson, 2007), as a consequence of the Industrial Revolution, people started moving from the countryside to the cities, which resulted in a rise in the amount and variety of garbage, prompting authorities to consider how to safely dispose of it to preserve public health. (Amasuomo & Baird, 2016: 94) said that waste is already ambiguous in meaning because the term can be interpreted in many different ways and is also influenced by personal opinion. Therefore, it is important to understand what constitutes waste and the different types of waste to properly deal with and manage it. As with other types of garbage, industrial waste is connected to many environmental issues, and industrial solid waste is the most harmful component of waste and has major negative environmental and public health implications.

Basu (2009) defined waste as any product or substance that does not serve the intended purpose of the final product (Amasuomo, & Baird, 2016:89). In terms of physical condition, ("White et al., 1995") found that waste may be divided into three primary categories: liquid, solid, and gas. As the global population and buying power expand, more things are created to match the rising demand, resulting in an ever-increasing amount of waste (Vergara & Tchobanoglous, 2012). According to (Ghiani et al., 2014), the appropriate organization of waste management has become a crucial duty to safeguard the ecosystem by disposal of residual waste. ("Demirbas, 2011") explains waste management as the process by which waste is collected, transported, and treated before any residue is disposed of. Some techniques of waste disposal are superior to others. For example, some firms opt to reuse, recycle, compost, and generate energy from incineration rather than burying their waste in landfills. Despite this, some of the preferred management methods for waste disposal often produce hazardous materials such as incineration waste (Amasuomo, & Baird, 2016:93). (Wilson et al., 2006) explain that these waste management processes are framed in an established hierarchical relationship based on the most effective way to manage waste without destroying the environment. Instead of sending garbage to landfills, the waste management hierarchy promotes recycling and reusing.

Waste management theory also provides a clear idea of what waste is and how it can be converted into a useful product, and important waste outcomes that include best practices for its management (Singh, 2017). Waste management is a pro-environmental activity aimed at limiting the negative effects of waste and is one of the primary driving factors behind businesses' sustainable practices. (Cordite et al., 2010); (Ferreira et al.,2017). Based on the above, the researchers see that waste management is the efforts made to control all activities related to waste from collecting, transporting, treating, recycling, or disposing of waste to mitigate its negative effects on the environment and health, and the ability to effectively manage resources through recycling.

4.1.2 Green Self-Efficacy

(Bandura, 1982; 1997) established the notion of self-efficacy, which relates to an individual's conviction in his ability to execute or finish a course of action to reach a successful result. Individuals' ideas about their capacity to achieve particular levels of performance are termed self-efficacy. Individuals who have a strong sense of self-efficacy are more likely to achieve their objectives and stay committed to them. As most people desire to undertake activities that are compatible with their views, laws, and social duties, self-efficacy is connected with several behavioral outcomes such as participation and persistence. (Chen et al., 2014:6608), (Ahmad et al., 2021), (Sharma & Dayal, 2016) explained Self-efficacy increases intrinsic motivation that leads to pro-environmental behavior. According to this concept, self-efficacy represents the beliefs related to the ability of organizations to work to reduce environmental degradation, which helps them to understand the special ability related to organizing and directing the course of environmental action that aims to lead a positive environmental behavior.

According to Chen et al., (2014:6607) green self-efficacy is the belief in individuals' abilities to organize and implement the courses of action necessary to achieve environmental goals, and green self-efficacy can be activated based on individuals' belief in their competencies to participate and accomplish environmental tasks (Mughal et al., 2022:307), Because it's a crucial part of environmental ideas and attitudes, green self-efficacy encourages firms to engage in environmentally friendly practices, such as waste management, by making managers more accountable for their actions (Gholami et al., 2013: 432). Based on the previous viewpoints, green self-efficacy can be defined as individuals' beliefs about their abilities to adapt to environmental situations and achieve desired goals, which are reflected in their choice of

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activities and practices required to comply with environmental requirements. (Guo et al., 2019:3) demonstrates the potential of waste management contributing to the safe treatment of trash and encouraging the green development of organizations, where it can be viewed as one of the essential processes for organizations to react to government environmental regulations and to practice the environmental development strategy to limit the negative influence on the environment via the implementation of green production. In addition, targeting manufacturing and other highly polluting organizations, and promoting environmental responsibility awareness management can actively encourage the organization to perform green production and environmental improvement. Green production practices aim to achieve the optimal use of resources and energy to reduce waste and emissions and thus give a comprehensive and integrated preventive approach to protecting the environment and optimal utilization of resources and ensuring the reduction of pollutants and emissions through a set of activities, procedures, skills, and beliefs that individuals use to deal with environmental situations and requirements to reach the desired goals and reduce Negative environmental influences. We can show that managers' green self-efficacy has a big influence on green production methods. (Esfahan et al., 2015). This is because the green self-efficacy of managers can interfere with assigning responsibility by waste “management to green production practices”. (Guo et al.,2019:4).

4.1.3 Green Production

Production is defined as a collection of production processes performed by an organization to get outputs that fulfill the wants and aspirations of consumers, as (Singh et al., 2018: 68) state that it is the process of changing numerous inputs into products or components that suit the demands and include raw materials and energy, where waste and emissions harm the environment, and the industrial sector utilizes around 37 percent of world energy production, and traditional production practices were primarily concerned with satisfying customer needs while maintaining competitiveness; in terms of product quality and timely delivery, strict environmental procedures and regulations have resulted in the emergence of a new system known as green production, which focuses on reducing resource consumption by eliminating waste, improving productivity, efficiency, quality, and customer satisfaction, and focusing on services and goods that it is proliferating. (Abualfaraa et al., 2020: 4) (Luthra et al., 2016:151) consider the use of environmentally and socially responsible practices; to reduce the negative effects of manufacturing activities and achieve economic benefits, it assists the organization in achieving profit and efficiency in operations, as well as improving its competitive position. According to (Gaikwad et al., 2017:8), it is a technique that employs new technology to provide efficient environmental solutions, resulting in cost savings and greater productivity. Matic et al., (2019:337) A manufacturing approach that uses technology and environmental management systems to create environmentally friendly products and services. According to (Bu et al., 2020:5), it is an effective strategy for the organization's work; to establish a sustainable and clean environment by generating environmentally friendly and harmless goods. Lokpriya & Sunnapwar (2020:1) demonstrate that it is an effective strategy for reducing waste and pollution by enhancing the environmental performance of manufacturing processes via best practices and seeking to minimize waste creation. Based on the preceding, it is an operational system that relates to environmental sustainability by producing environmentally friendly products and services while decreasing waste and pollution. It is worth mentioning that several brands are associated with green manufacturing, such as: (clean manufacturing, environmentally friendly manufacturing, environmentally responsible production, and cleaner production).

4.2 Green Production Importance

The importance of green production lies in: (Paul et al., 2014: 1645) , (Hsu et al., 2016: 91) , (Tiwari et al., 2017: 8)

1. Creating ecologically friendly goods by using materials and procedures that have a low environmental effect.
2. Help reduce greenhouse gases.
3. Conservation of energy and natural resources.
4. Reducing the costs of raw materials.
5. Increase production efficiency and improve products.
6. Increase the profitability of the organization.

Setyaningsih & Indarti, 2018: 9) agree with them in:

1. Improving environmental performance by reducing waste to a minimum.
2. Reducing the use of raw materials.
3. Reduce energy consumption to a minimum.
4. Pollution control and waste recycling.

4.3 Green Production Objectives

It aims to**:** (Dutta et al., 2019: 8)) , (Zhang et al., 2019: 7)

1. Reducing industrial enterprises' pollution and gaseous emissions.
2. Improving efficiency and decreasing raw material, energy, and natural resource use.
3. Use of environmentally friendly manufacturing processes and cutting-edge technology to achieve lower input and greater overall output.
4. Reducing the cycle cost of goods and services.

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5. Expand your market share and profitability.
6. When executed, it adds economic benefit.
7. Meeting the needs of consumers and society.

4.4 Green Productions' Advantages

We can see some advantages as mentioned in: (Keshani, 2017: 36)

1. No hazardous gases are released into the atmosphere.
2. Manufacturing using fewer resources may result in cheaper costs.
3. Energy conservation through using less material and energy during operations.
4. Ensuring economic advantages by lowering raw material prices via the use of recycled waste and increasing manufacturing efficiency.
5. Control of actions that may endanger the community's health.
6. Reuse materials derived from recyclable sources.
7. Reducing harmful emissions, particularly carbon dioxide.

4.5 The Practices of Green Production

Both Ghazilla et al., (2015:665)and (Ishikomo & Uduk, 2017:109)

1. Increasing the efficacy of manufacturing.
2. To save money, we may use recycled materials instead of purchasing new ones.
3. It's less expensive to do things the right way, both environmentally and professionally.
4. Reducing the harmful influence on the environment while improving the organization's work.
5. Pollution prevention via lowering energy, raw materials, and solid waste use.
6. Products should be recycled.
7. It is important to use ecologically friendly products and sources of energy.
8. Products and procedures should be redesigned.
9. Product supervision procedures should be taught to staff.

Misbahuddin et al. (2019:4) classified the green's production experiences into:

4.5.1 pollution Avoidance Techniques Tend to

1. Reduce manufacturing costs.
2. Improved efficiency.
3. Improve morale and involvement in decision-making amongst staff members.

4.5.2 Practices Classified b\Based on Waste Prevention or Product Stewardship Practices Tend to

1. Improving the reputation of the organization.
2. Reducing the responsibility of workers for production only, but also all members of the organization.
3. Increased quality.
4. Working with innovative ideas.
5. Gain new customers.

4.6 Research Gap

This study deals with the concept of waste management, which is characterized by kinetics and its focus on the level and reality of the application of green production practices through the mediating role of green self-efficiency in the Diwaniyah Tires Factory as a production organization whose manufacturing operations permeate the emission of gases and waste that leave an environmental impact on the local community, which is neglected in the studies previously.

4.7 The Hypotheses of the Study

In light of the study problem, the following hypotheses were formulated:

- First hypothesis: There is a significant correlation between waste management, green self-efficiency, and green production practices.
- The second hypothesis: There is a significant effect of waste management on green self-efficacy.
- The third hypothesis: here we can see a significant effect of green self-efficacy in green production practices .
- Fourth hypothesis: There is a significant effect of waste management in green production practices through the mediating role of green self-efficacy.

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5. Research Methodology

The study used a five-point Likert scale to assess how much respondents agreed or disagreed with each measurement feature as required at the study's production location, with (1) representing disagree and (5) representing entirely agreed (Appendix 1). Waste management, green production processes, and green self-efficiency are among the issues considered in this study. To test the reliability and validity of variable measurement in this study, the authors investigated current research and chose the final scale measurement with expert consultation and evaluation, as shown in Appendix (1). Waste management is the efficient management of waste created by businesses throughout the production and operating processes, to reduce negative environmental effects, improve resource use, and maximize economic and environmental advantages. (Akda & Beldek,2017:175) To scientifically assess it, four items were used (see Appendix 1), taken from (Guo et al, 2019:13), with a Cronbach's alpha of (0.753), indicating that the measurement of This type is quite dependable. Green self-efficacy blends self-efficacy with green elements, emphasizing an individual's autonomy in determining whether they can successfully handle environmental challenges. Green self-efficacy was tested using 5 questions derived from (Chen et al., 2015:6612) Cronbach's alpha coefficient (0.913), indicating that the green self-efficacy measure is highly reliable. Green manufacturing practices emphasize as previously said, effective and efficient manufacturing practices that contain sustainable plans and aims (Govindan et al. 2014:556). Green manufacturing helps firms to be inventive in both product development and production operations. These technologies benefit enterprises significantly. (Veleva & Ellen-Becker, 2000:102) This involves acquiring new consumers, establishing a market position, and improving environmental, social, and financial performance all at the same time. Green production practices were assessed using four components (see Appendix 1), which were modified from (Baah et al.,2021:108) Cronbach's alpha coefficient 0.900, indicating that the green production practices measure is highly reliable.

5.1 Study Sample

This study explores the role of Al-Diwaniyah Tires Factory which was chosen as an applied field of study for its vital role in supplying the local community with its products and its enjoyment of highly qualified capacity and cadres. There were several hypothesis tests conducted in this study. The first test was the response rate. See for example, (Mohammed Abdulellah Yousuf Saeed, Bekhet, & Dhar, 2017); (Mohd Abdulellah Yousuf Saeed, & Bekhet, 2018). Sixty (60) questionnaires were distributed to them, their inquiries were listened to, and the relevant aspects of the study were clarified. 60 questionnaires were received, meaning that the response rate reached 100%. Based on such response rates then the explanation of the test results of the model of the variation in the percentage of the dependent variable with the explanatory variables should demonstrate the model accounts (Araya & Miras, 2015). In the following section, we focus on the statistical methods.

5.2 Statical Methods

We developed an economic model using the multiple regression method. The model is used to explain the relationships between the dependent variable and the independent variables (Araya, Dahalan, & Muhammad, 2021a). the regression method is widely used in many study areas because simple assumptions can be easily modeled and multiple regression is used to test the effects of n independent (predictor) variables on a single dependent (criterion) variable (Araya, Dahalan, & Muhammad, 2021b). The following statistical methods were adopted:(Arithmetic mean, standard deviation, Variation coefficient (variance), Relative importance, Confirmatory factor analysis, Correlation analysis, Kolmogorov-Smirnov test, and Cronbach’s alpha coefficient.

5.3 Data Analysis and Results

There are 60 questionnaires that have been recovered, and the data will be put into SPSS.vr.26 and AMOS.vr.26 statistical programs to speed up the process of data collection, tabulation, and classification, and for the sake of convenience. Analysis of data using statistical methods to get the best results in handling the phenomena under investigation, a set of symbols and abbreviations presented in Table (1) have been used to compensate for the various variables:

5.3.1 Encoding and Characterizing the Search Variables

Symbols are used in this paragraph to simplify and analyze the study factors so that the reader can easily comprehend the information and arrive at the most accurate statistical parameters, which will lead to the best results. Table (1) provides an overview of the study variables' coding and categorization.

Table: 1 Coding and characterization for research variables

Code	Paragraphs	Variables
WAMA	4	Waste management
GRSE	5	Green self-efficacy
GEPP	4	Green production practices

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5.3.2 Verifying the Data's Moderation.

This paragraph deals with the test of the normal distribution of the data withdrawn from the phenomenon in question. It requires samples of administrative research in particular and scientific research, in general, greater than (30) to see the use of the Kolmogorov-Smirnov test to examine the data of the studied sample and to indicate the extent of its normal distribution, and therefore the decision to accept or reject this test is related to a level of morale greater than (0.05) until acceptance is completed and vice versa and Table (2) shows the test of moderation of the withdrawn data.

Table: 2 Data gathered for the moderation test

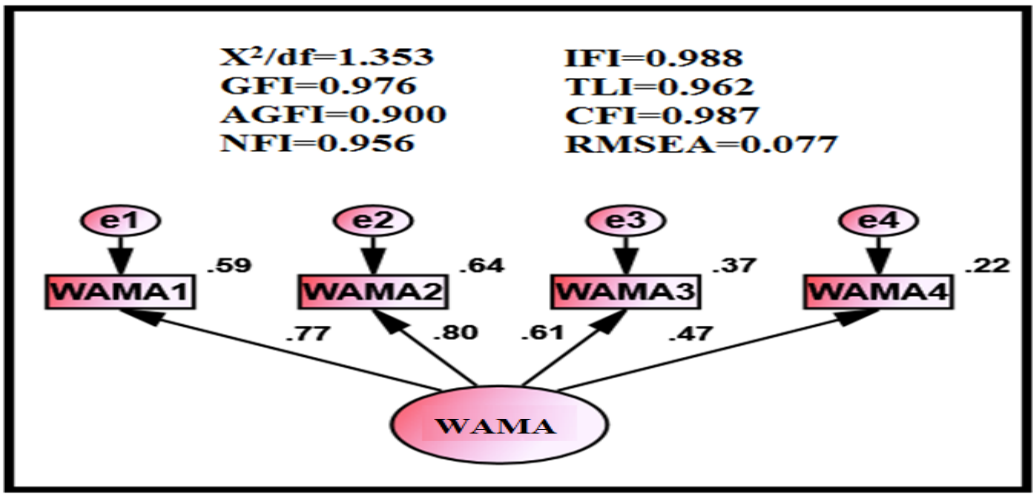
Variables	Kol-Smi	Statistical Parameter
Waste management	0.209	0.200a
Green self-efficacy	0.210	0.200a
Green production practices	0.235	0.200a

5.3.3 The Structural Validity of the Research Variables

Using structural analysis, we can determine how many standard saturations were produced to describe each variable in the study, and these saturations need to be greater than (0.30) for all of the research's paragraphs and by (13). This is important for the validity of equation modeling. Three primary variables were used in the study, which had a three-variable structure (AMOS.vr.26). The research consisted of three main variables, which are:

1. An independent variable (waste management) was subjected to a confirmation factor analysis. As shown in Figure (1), a modified confirmatory factor analysis of the structural model of the waste management variable. Which consists of (4) paragraphs of my agency:

Figure: 1 The structural model of the waste management variable



Source: Prepared by the researchers based on the program (AMOS.vr.26)

It is noted from Figure (1) that all the items of the waste management measuring tool had a standard saturation greater than (0.40), which is identical to the indicators of quality of conformity set by (Hair et al., 2010), which means that these indicators give a good indication that the items that Developed to measure the waste management variable explain the phenomenon well.

2. Green self-efficacy was shown to be a significant mediating component in the study. There are five paragraphs and my agency in this structural model for green self-efficacy, as shown in Figure (2) (confirmatory factor analysis).

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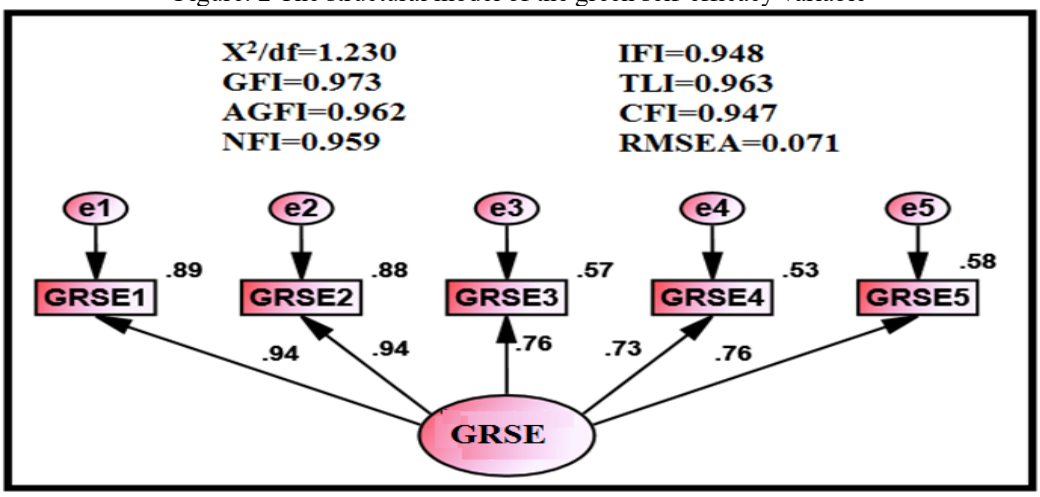
Figure: 2 The structural model of the green self-efficacy variable

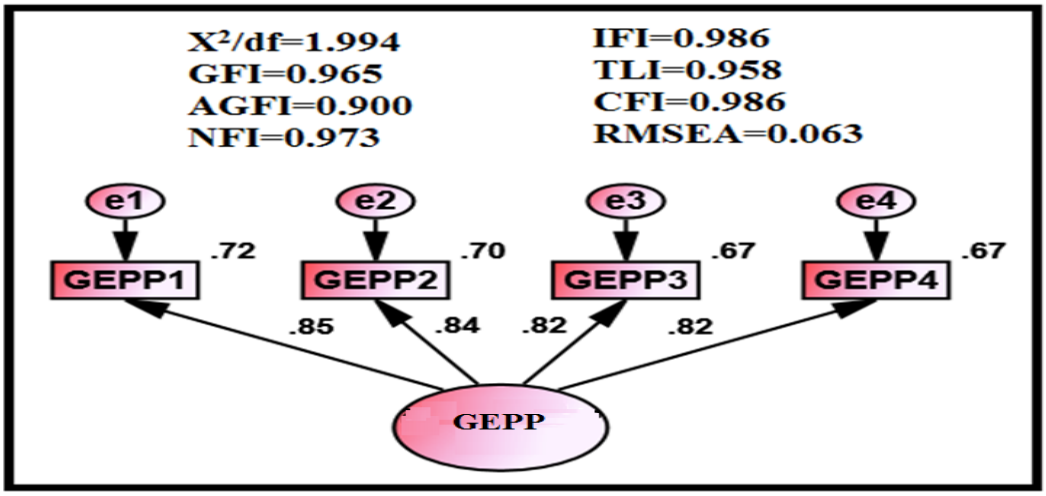


Source: Prepared by the researchers based on the program (AMOS.vr.26)

it is noted from Figure (2) that all the items of the green self-efficacy measurement tool have a standard saturation greater than (0.40), which is identical to the quality indicators of conformity set by (Hair et al., 2010), which means that these indicators give a good indication that the items that Developed to measure the green self-efficacy variable explains the phenomenon well.

3. The third and final component analysis of the dependent variable (green production practices):. There are four paragraphs and my agencies in Figure (3) of the updated confirmatory factor analysis of the structural model for the green production practices variable:

Figure: 3 The structural model for the variable green production practices



Source: Prepared by the researchers based on the program (AMOS.vr.26)

Since all items measured by this tool had standard saturations greater than (0.40), which are the same as the indicators of quality of conformity established by (Hair et al., 2010), it is clear that these indicators provide a good indication that the items developed to measure the variable green production practices, and thus this phenomenon is fully explicable.

5.3.4 Stability Measuring Instrument Testing

Data collected from (60) respondents in a random sample were analyzed for their reliability and stability through using the “Cronbach's Alpha method”, which takes into account the conditions of stability while conducting this kind of test. Table (3) provides Cronbach's alpha coefficients when the resolution data has a value larger than 70%.

Table: 3 Cronbach's alpha coefficients for the research variables

Variables	Cronbach's Alpha
Waste management	0.753

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Green self-efficacy	0.913
Green production practices	0.900

It is noted from the results of the above table that the research measurement tool is characterized by relative stability, as academic and administrative research requires, in particular, measuring the suitability of the measurement tool to the phenomenon that was developed for its measurement. This shows the stability of waste management items with a value of (0.753), green self-efficacy with a value of (0.913), and green production practices with a coefficient of (0.900).

5.3.5 Diagnosing and Describing the Research's Variables

Individuals of the phenomena were asked to respond, and it was found that each paragraph had a distinct arithmetic mean and standard deviation as indicated in Table (4).

Table: 4 Description of the research variables

Paragraphs	Arithmetic mean	Standard Deviation	Relative Significance	Paragraphs	Arithmetic mean	Standard deviation	Relative Significance
WAMA1	3.63	1.12	91%	GRSE4	4.55	0.81	73%
WAMA2	3.67	1.14	86%	GRSE5	4.28	0.96	73%
WAMA3	3.78	0.93	84%	GRSE	4.2	0.82	76%
WAMA4	3.92	1.18	78%	GEPP1	3.92	0.79	78%
WAMA	3.65	1.15	85%	GEPP2	4.24	0.64	73%
GRSE1	3.65	1.09	82%	GEPP3	4.08	1.14	73%
GRSE2	3.6	1.06	79%	GEPP4	3.95	1.03	72%
GRSE3	3.7	0.98	71%	GEPP	3.55	0.98	74%

The above table shows the following:

1. Waste Management

Waste management items (WAMA1-WAMA4) obtained mean (4.55, 4.28, 4.2, 3.92), respectively, with standard deviations (0.81, 0.96, 0.82, 0.79), and a relative interest of (91%, 86%, 84%, 78). %) respectively, which means that all standard deviations have the consistency and harmony of the responses of the phenomenon concerned about the items of waste management. Based on the foregoing, the waste management variable has obtained general arithmetic mean of (4.24), a standard deviation of (0.64), and a relative interest of (85%), to show the consistency of the paragraphs of this variable and their agreement to treat waste in the concerned phenomenon as much as possible.

2. Green Self-Efficacy

The green self-efficacy items (GRSE1- GRSE5) had arithmetic means of (4.08, 3.95, 3.55, 3.63, 3.67), respectively, and with standard deviations (1.14, 1.03, 0.98, 1.12, 1.14), and with a relative interest of (82%, 79 %, 71%, 73%, 73%) respectively, which means that all standard deviations have the consistency and harmony of the responses of the phenomenon concerned about the green self-efficacy clauses. Based on the foregoing, the green self-efficacy variable has obtained general arithmetic mean of (3.78), a standard deviation of (0.93), and relative importance of (76%), to show the consistency of the paragraphs of this variable and their agreement to achieve green self-efficacy in the phenomenon concerned as much as possible.

3.Green Production Practices

The paragraphs of green production practices (GEPP1- GEPP4) obtained arithmetic means that amounted to (3.92, 3.65, 3.65, 3.6), respectively, and with standard deviations (1.18, 1.15, 1.09, 1.06) and with a relative interest of (78%, 73%, 73%, 72%) respectively, which means that all standard deviations have the consistency and harmony of the responses of the concerned phenomenon about the paragraphs of green production practices. Based on the foregoing, the green production practices variable obtained general arithmetic mean of (3.7) with a standard deviation of (0.98) and a relative interest of (74%), to show the consistency of the paragraphs related to this variable and their agreement on building green production practices for the phenomenon concerned as much as possible.

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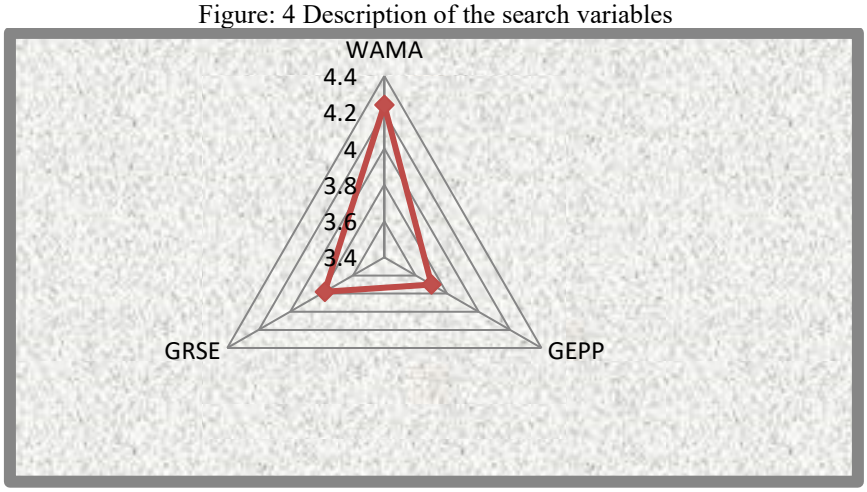
Figure: 4 Description of the search variables



5.3.6 Testing the Research Hypotheses

1. Correlation hypotheses: To test the correlation between waste management, green self-efficacy, and green production practices, the researchers used the simple correlation coefficient (Pearson), as shown in Table (5) as follows:

Table: 5 Correlation matrix between search variables

Waste management	Green self-efficacy	Green production practices		
Waste management	Pearson Correlation	1	.931	.197
	Sig. (2-tailed)		.000	.131
	N	60	60	60
Green self-efficacy	Pearson Correlation	.931	1	.801**
	Sig. (2-tailed)	.000		.000
	N	60	60	60
Green production practices	Pearson Correlation	.197	.801**	1
	Sig. (2-tailed)	.131	.000	
	N	60	60	60

**. Correlation is significant at the 0.01 level (2-tailed).

The relationship of waste management and green self-efficacy had the highest correlation value of (0.931), indicating the consistency of the responses of the phenomenon concerned, The results also show that there is a significant correlation between green self-efficacy and green production practices at a rate of (0.801), As well as the absence of a significant correlation between waste management and green production practices, to indicate the awareness of the concerned phenomenon of the importance of green self-efficacy to strengthen the relationship between waste management and green production practices. The above results also show evidence of the importance of using the mediating role for green self-efficacy, as it is necessary to use the mediating role to the absence of a linear relationship between the independent variable and the dependent variable, and this is what the results indicated above. Based on the foregoing, it is possible to accept the validity of the claim of the first hypothesis, which states that there is a significant correlation between waste management, green self-efficacy, and green production practices.

2. Impact hypotheses: To test the relationship of direct and indirect influence between waste management, green self-efficacy, and green production practices, the researchers used structural equation modeling and my agencies:

A- Testing the Direct Effect Hypotheses

The preamble to test the indirect influence relationship requires measuring the amount of direct effect between (waste management and green self-efficacy) on the one hand, and (green self-efficacy and green production practices) on the other hand, and in this case, in the case of proving the existence of a direct influence relationship between these variables, then This qualifies the current research to test the indirect impact hypothesis at its partial levels, as follows:

The results show that there is a direct impact of waste management on green self-efficacy, which means that the analytical indicators in Figure (5) and Table (6) show the awareness of the relevant phenomenon of the importance of waste

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management, which means that an improvement of one standard deviation achieves green self-efficacy by (0.434), with a standard error of (0.109). Waste management contributed to explaining an amount of (0.867) of the variation in green self-efficacy, while the remaining value is outside the limits of the research.

Figure: 5 "The structural model for the impact of waste management on" green self-efficacy

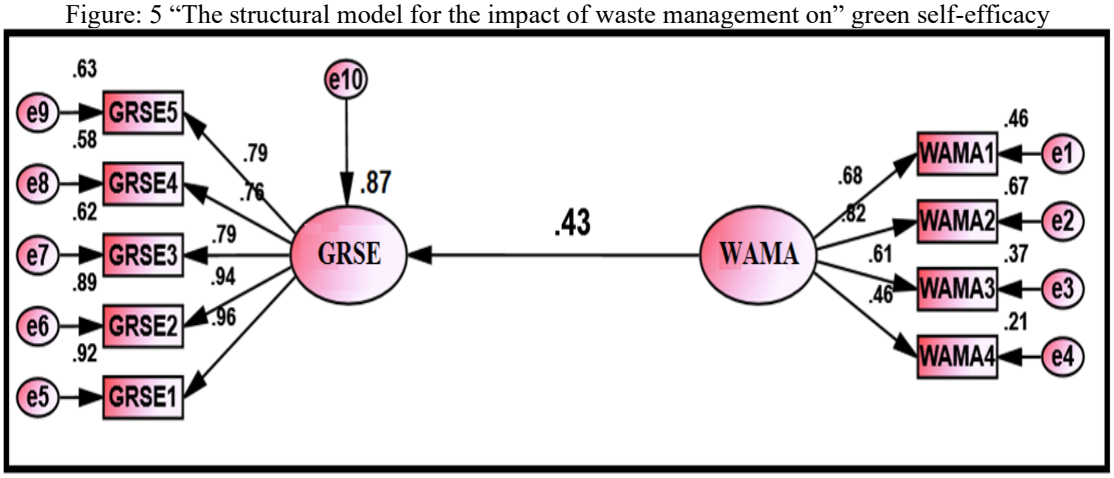

Table: 6 Summary of the results of the analysis of the direct impact of waste management on green self-efficacy

Path	Estimates	Standard Error	Critical Value	R2	P
Waste Management	>---				
Green self-efficacy	0.434	0.109	3.982	0.867	0.001

Source: Prepared by the researchers based on the outputs of (AMOS.vr.26)

Based on the foregoing, it is possible to accept the validity of the claim of the second hypothesis, which states that there is a significant effect relationship between waste management in green self-efficacy. To conclude, it is conceivable to agree with the second hypothesis's conclusion that there is a substantial relationship between green self-efficacy and waste management. The results show that there is a direct effect of green self-efficacy on green production practices, which means that the analytical indicators in Figure (6) and Table (7) show the awareness of the relevant phenomenon of the importance of green self-efficacy, which means that an improvement of one standard deviation achieves production practices Green has a ratio of (0.888) and a standard error of (0.083). Green self-efficacy contributed to explaining (0.642) of the variation in green production practices, while the remaining value is outside the research boundaries.

Figure: 6 "Structural model of the effect of green self-efficacy on the green" production

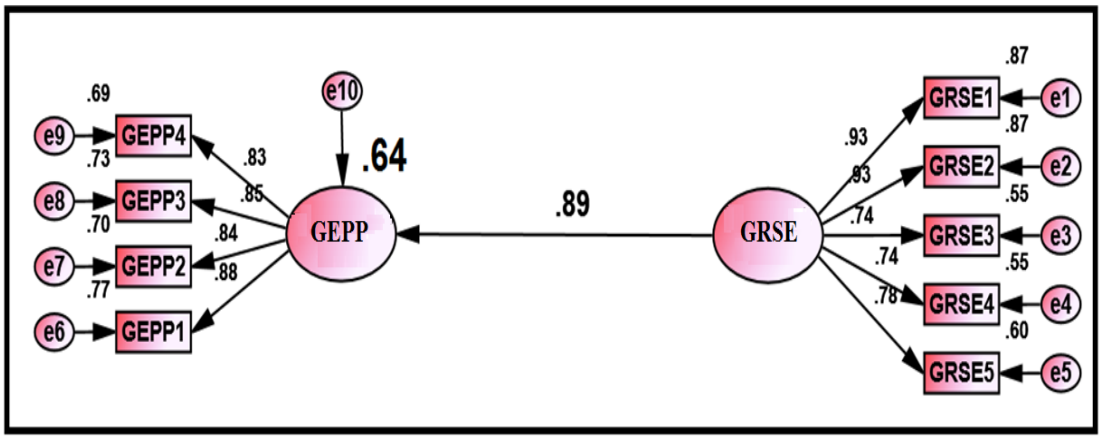

Table: 7 Summary of the results of the analysis of the direct impact of green self-efficiency in green production practices

Path	Estimates	Standard Error	Critical Value	R2	P		
Green self-efficacy	>---	Green production practices	0.888	0.083	10.699	0.642	0.001

Source: Prepared by the researchers based on the outputs of (AMOS.vr.26)

Based on the foregoing, it is possible to accept the validity of the claim of the third hypothesis, which states that there is a significant effect relationship between green self-efficacy in green production practices.

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B- Indirect Effect Hypothesis Testing:

The completion of the first step related to the direct effect, and the absence of a correlation between waste management and green production practices, qualifies this matter to test the total indirect impact of the absence of a partial relationship to waste management in green production practices, as follow: The results show that there is an indirect effect of waste management on green production practices through the mediating role of green self-efficiency, which means that the analytical indicators in Figure (7) and Table (8) show the awareness of the relevant phenomenon of the importance of the impact of waste management on green production practices through the mediating role of self-efficiency Green production, which means that an improvement of one standard deviation achieves an improvement in green production practices by (0.405) and with a standard error of (0.093. Waste management also contributed through the mediating role of green self-efficiency in explaining the amount of (0.650) of the variation in green production practices, while the remaining value is outside the limits of the research.

Figure: 7 A structural model for the "impact of waste management on green production practices through the mediating role of green" self-efficiency

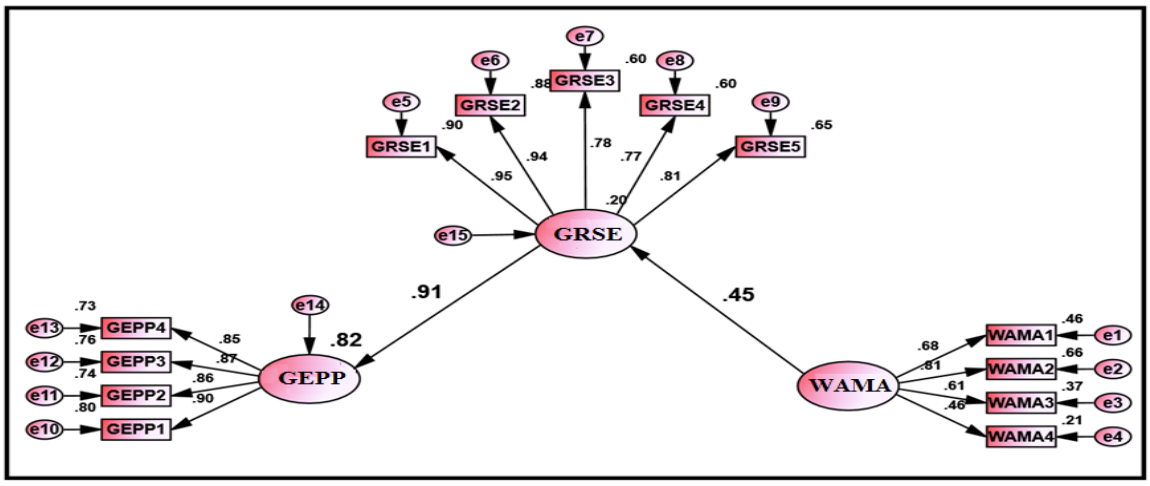

Table: 8 summarizes the results of the analysis of the indirect impact of waste management on green production practices through the mediating role of green self-efficacy

Path			Estimates	Standard Error	Critical Value	R2	P		
Waste Management	>--	Green production practices	0.000	0.000	0.000	0.000	n.s		
Waste Management	>--	Green self-efficacy	>---	Green production practices	0.405	0.093	4.355	0.650	0.001

Source: Prepared by the researchers based on the outputs of (AMOS.vr.26)

Based on the foregoing, it is possible to accept the validity of the claim of the fourth hypothesis, which states that there is an indirect influence relationship with a moral significance for waste management in green production practices through the mediating role of green self-efficacy.

6. Conclusion

A significant correlation can be seen between waste management and green self-efficacy, green self-efficacy and green production practices, indicating that the concerned factory is interested in achieving its long-term goals through the implementation of green self-efficacy to improve the relationship between waste management and green production practices. The concerned factory realized the importance of implementing safer and more environmentally friendly measures to promote waste recycling. The concerned factory's understanding of the significance of environmental protection improves its capacity to deal successfully with diverse environmental challenges. Awareness of the necessity for the concerned factory to set up and configure production processes to increase compliance with global environmental standards and guidelines. The concerned factory is aware of the importance of reducing waste and emissions during its production process and recycling its waste.

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7. Study Limitation

Spatial limits: Al-Diwaniyah tires factory. Scientific limits: "The study is limited to the impact of waste management on green production practices through the mediating role of green self-efficacy". Human limits: workers in the factory of all disciplines and levels.

8. Recommendations

The relevant factory shall dispose of the waste categorically by recycling it in line with factory requirements. The need for the concerned factory to satisfy waste storage requirements in a manner that does not hurt or impair the environment. The requirement for the concerned factory to keep up with environmental changes by devising inventive solutions and conserving the environment to the greatest extent feasible. The need for the concerned firm to invest in internal and external green manufacturing procedures to provide environmentally friendly and safer goods. The requirement for the concerned firm is to focus on optimizing production procedures to prevent squandering raw materials and using a lot of energy. "The researchers propose more study on the relationship between environmental awareness and green sustainable behaviors.

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Appendix (1) Questionnaire Form

1.Waste Management

#	Items	Strongly agree	Agree	undecided	Disagree	Strongly disagree
1	The Factory sets measurable goals for waste reduction.					
2	The Factory applies the most environmentally friendly and safer procedures to promote waste recycling.					
3	The Factory properly disposes of hazardous waste, in compliance with the Factory standards.					
4	The waste storage facilities in our factory meet environmental requirements.					

2. Green Self-Efficacy

#	Items	Strongly agree	Agree	Partially agree	Disagree	Strongly disagree
1	I think I can succeed in protecting the environment.					
2	I think I have the ability to deal with environmental problems effectively.					
3	I think I can overcome environmental problems.					
4	I feel that my work is actually fulfilling the mission of protecting the environment.					
5	I think I can find creative solutions to environmental problems.					

3. Green Production Practices

#	Items	Strongly agree	Agree	undecided	Disagree	Strongly disagree
1	Our factory is constantly reconfiguring production processes to improve compliance with production environmental guidelines, standards and legislation.					
2	Our factory reduces waste and emissions through recycling programs, and reverse logistics, among other things.					
3	Our factory invests in indoor and outdoor green production processes to produce safer and more environmentally friendly products.					
4	Our factory optimizes production processes to avoid waste of raw materials and high energy consumption.					

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