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# Investment in Sustainable Development Through the Transition to the Use of Electric Vehicles in Accordance with the Kingdom's Vision 2030

**By**

**Abeer Bakri Siralkhatim Alhaj**
king khalid university
E.mail: aalhaaj@kku.edu.sa

**Engy ahmed abdelghany Mostfa**
king khalid university
E.mail: emostfa@kku.edu.sa

**Reda Abdelfattah Ibrahim Mohmed**
king khalid university
E.mail: Redam@kku.edu.sa

## Abstract

There is growing interest around the world in investing in the transition to electric vehicles, supporting their deployment and infrastructure in attempts to reduce the use of environmentally damaging fossil fuel derivatives, and keeping pace with growing global public awareness of the need to reduce greenhouse gas emissions and counter global warming.Economic and technological growth has become one of the most important developmental aspects ever, as it represents a way to reach environmental protection and reduce the enormous depletion of its benefits.One of its most important findings is the statistically significant positive relationship between investment in the sustainable environment and the use of electric vehicles. The study also revealed that the tendency to use electric vehicles leads to development, and that many companies strive to be leaders in the application of the concept of sustainable development, by encouraging innovations that reduce emissions and assume social and environmental responsibility that will preserve the environment.The most important recommendations were financial support for innovations in sustainable development, especially in automakers. The need for car companies to be interested in developing intellectual and technical skills according to the needs of sustainable development ", through courses and workshops that build the intellectual capital skills of their human resources.

**Keywords**: Investment, Sustainable Development, Electric Vehicles

## Introduction

The world is undergoing significant and accelerated changes in all areas, with a focus on sustainable development becoming one of the evolving variables contributing to development and development in various areas. Hence the emphasis on the importance of switching to the use of electric vehicles to preserve the sustainable environment.

## Research Problem

The problem of research is that while it is important to preserve the sustainable environment through the transition to automobile use and reduce fuel consumption, there is a

problem of infrastructure development, hence the importance of conducting experiments and operating that bring vehicles under the control of specialists and government agencies.

Hence the problem of the study is centered on the President's question:

How compatible is investment in sustainable development and the transition to electric vehicles?

The Chairman's question emerges from the following sub-questions:

1- How much is the community able to create the infrastructure to make the transition to electric vehicles?
2- What actions contribute to promoting investment in sustainable development by switching to electric vehicles?

## Research Objective

The main objective of the research is to draw attention to environmental benefits by shifting to the use of electric vehicles through the portfolio of natural and human resources underpinning sustainable development. Sustainable development can only be achieved through the development of strategies that are formulated and implemented sustainably from an environmental and social standpoint.

## Research Importance

The importance of research stems from growing interest around the world in electric cars and supporting their spread and infrastructure, with attempts to reduce the use of environmentally damaging fossil fuel derivatives, and to keep pace with growing global public awareness of the need to reduce greenhouse gas emissions and counter global warming.

## Research hypothesis

In the light of the research problem and its objectives, the following hypothesis has been formulated:

There is a statistically significant correlation between promoting investment in sustainable development and the transition to electric vehicles.

## Research Limits

1. Time limits: 2022 m.
2. Spatial Limits: Abdul Latif Jameel Automotive
3. Human boundaries: Employees of automobile companies

## Research methodology

1- Historical curriculum
2- Inductive curriculum
3- Observation and personal interviews

## Previous studies

Study (Mohammed, 2022), aimed at demonstrating the study of the financial and environmental revenues of using solar energy as a source of electricity in irrigation in newly reclaimed lands compared to fuel-powered electricity sources The study was conducted on a sample of agricultural investment companies and solar energy companies in Matrouh governorate. The research drew on the theoretical study of the linkage between solar energy and agrarian reclamation projects and the linkage between the use of solar energy and low production costs and high return on other sources of energy the study found that the use of solar energy as an energy source is one of the most important development tools for horizontal expansion projects, The use of solar energy also yields the lowest cost and the highest return compared to other fueled energy sources.

Study (Fathi, 2022), research objective to clarify the concept, objectives and characteristics of sustainable development and analysis of the dimensions of sustainable development in Malaysia and knowledge to the extent of improvements in the dimensions of sustainable development in Malaysia and analytical approach when analysing data issued by the competent authorities approach ", to develop a set of lessons learned, and a descriptive and historical approach was drawn upon when addressing the theoretical dimension of the study.

The study found the validity of imposition in Malaysia's economic and social dimension of sustainable development and not improving the environmental dimension, the study recommended that the topic of the restructuring of education should be given the utmost importance, at all stages, and that scientific research, development and innovation should be strengthened through national plans supported by regional and international conventions. and to keep pace with accelerated technological changes to accommodate ongoing developments in ICT and other human knowledge, and the need to increase attention to the environmental promise of sustainable development.

A study (kenawy, 2022) aimed at identifying the level of dimensions of sustainable smart cities in public offices in Egypt (Digital Amenities - Smart Growth - Sustainable Smart Environment - Intelligent governance, identification of programs and services applied by public offices that contribute to the transition to the sustainability of smart cities, as well as determining the extent to which sustainable smart cities contribute to the promotion of digital citizen participation, and measuring the role of community participation in assessing social sustainability. A comprehensive methodology review and an important analysis of content was conducted and organized for four key terms: Sustainability, social sustainability, community participation and digital citizen participation.

Study (Abu Zeid, 2022), aimed at demonstrating the impact of sustainable marketing practices "Social dimension, economic dimension, environmental dimension" on marketing efficiency by applying to the chemical industry sector in 10th of Ramadan study found a positive impact of social dimension practices on the dimensions of marketing efficiency and demonstrated a lack of impact of economic dimension practices, and a partial impact of environmental dimension practices on the marketing efficiency dimensions of chemical industry companies.

Study (Madi, et al., 2022), aimed at identifying university education strategies in the light of sustainable development requirements, The study followed systematic flexibility in choosing social research approaches and tools The survey was used with professors of the faculties of engineering and literature. as well as the Ministry of Manpower and the Ministry

of Planning, the study found that the majority of faculty members and employees of the Ministry of Manpower and the Ministry of Planning and graduates are also not satisfied with the level of graduate performance of their work. The faculty and staff of the Ministry of Manpower and the Ministry of Planning and Alumni believe that the University's most important role in raising environmental awareness for achieving sustainable development goals is to encourage young people to participate in environmental awareness conferences and to conduct training courses for young people to engage in close environmental work.

The study (Hamed, 2022) aimed to demonstrate the relationship between FDI and sustainable development and the extent to which it affects different dimensions of sustainable development, especially the economic dimension, by using a model vis-à-vis error correction (Vector Error Correction Model) or so-called VECM, and attention to the study and analysis of the term "sustainable development" in its various dimensions, including the economic dimension; The study concluded that Egypt has been implementing sustainable development plans since the 1950s. But Egypt's concept of sustainable development has begun to be implemented since the beginning of the 1990s when it implemented the economic reform programmed, the study found a long-term correlation with FDI on the economic dimension of sustainable development.

The study (Shibli et al., 2019) aims to highlight the concept of sustainable development while addressing the various basic and secondary dimensions of this concept, and demonstrate the mechanism of its application at the level of economic institutions in general and the Land Rover Automotive Corporation in particular. The study found that the concept of sustainable development is the product of a range of conferences and developments at the environmental level, encompassing most of the core dimensions that exist. (Economic-Social-Environmental-Political-Cultural-Technological). The study revealed that Landrover is striving to become a leader in the concept of sustainable development by encouraging innovations that reduce emissions and assume social and environmental responsibility. It also found that Land Rover has achieved numerous vacations in recycling waste and reducing carbon emissions while supporting electric cars in 2020 in partnership with Jaguar Foundation.

Study (Abdullah, 2016), entitled Renewable Energy Economics in Germany, Egypt and Iraq s Development ", the study aimed at identifying the realities, problems and policies of using available renewable sources of energy, It also aimed to demonstrate the role of renewable energy in promoting sustainable development and access to solutions that help reduce pollution from fossil energy production and consumption The study found ways to rationalize energy and to arrive at scenarios for the effective use of renewable sources of energy

A study (Pandey, 2012), aimed at demonstrating the environmental aspect and damage produced by manufacturing processes, And what sustainable business practices are used to address these effects and to reach solutions with the education and motivation of managers required to implement such practices, which have environmental, social and economic dimensions, Like the threat of global warming, climate change and economic and social crises, the study found that the application of sustainable marketing leads to positive results to improve the physical environment and regulatory performance

Report (Policies to deploy electric mobility in Egypt, 2020). The report aims to disseminate the use of electric mobility in Egypt within the framework of the comprehensive picture of sustainable cities. It also aims to enhance understanding of the current situation of electric mobility in Egypt, with a focus on electric vehicles and associated infrastructure. Relevant developments in Egypt have been assessed and discussed with the parties concerned

to make recommendations on the future in order to mitigate air pollution and reduce climate change. In the latest update for 2019, the focus is on linking electric mobility to the larger context of sustainable cities, in order to ensure policy coherence. This includes the wider range, which includes walking, improving productivity, and preserving the city's heritage associated with walking. There is also a cross-cutting concern that the enforcement and operationalization of existing laws and regulations before future regulations, such as the implementation of environmental impact assessment, are discussed. The report found that safe air quality was an essential feature of a sustainable city, and that common services and public transport should be the priority in the deployment of electric vehicles, rather than private ownership. In addition to combining public transport policies with policies to rationalize the ownership and use of private cars and support to reduce the lack of public space and reduce emissions from older vehicles, while promoting a culture of participation, use of public transport and integration with last mile solutions.

## Theoretical framework

Sustainable development is one of the most recent topics that has captured the attention of the world as a whole over the past period. and at the level of all areas such as the global economic, social and environmental fields, Development sustainability has become a global school of thought that spreads across most of the world's developing and industrial countries alike, embraced by grass-roots and formal bodies and demanded its application. Many conferences, seminars and workshops have been held to discuss sustainable development issues in various areas. Although the concept of sustainable development has spread rapidly since its inception, it remains unclear and ambiguous, and continues to be interpreted in different ways by many.

More than ever, economic and technological growth is a way to reach environmental protection and reduce the enormous drain on its benefits. The world has therefore moved to use electric vehicles to preserve the environment through sustainable development.

From here we will try to work on identifying different concepts related to investment and sustainable development and the shift to the use of electric vehicles.

## Investment Concept

Investment is defined as the operations of one of the parties to economic activity, which are to create capital or increase the size of its presence with a view to obtaining greater satisfaction in the future (Ibrahim Metwally, 2011, p. 26)

If the investment is the transfer or retention of a person's unemployed public funds. Investment is also defined as: "the net increase in society's real capital, or is the use of goods and services to create new productive capacities. (Ali Lutfi, 2009, p. 3)

***Types of investments***

Many types of investment, as they can be private, corporate or government investment, are classified into two main types: real investment and financial investment.

1. Real investment: Investment is real or economic when an investor has the right to acquire a real asset. Or economically, the right to acquire a real asset, such as a drug, goods, gold, etc., means a real asset that has economic value per se and has an additional

economic benefit that appears either in the form of a commodity or in the form of a service. (Mohammed Matar, S77)

2. Financial investments include investing in the stock market where the investment process entails an investor's acquisition of a non-real financial asset in the form of a stock, bond or deposit certificate... etc. The financial asset represents a financial right that entitles the bearer to claim a real asset, usually attached to a legal document, and also entitles the bearer to a portion of the proceeds of the issuer's real assets. (Mohammed Matar, 77)
3. Eco-investing or green investigation is a form of socially responsible investment where investments are made in companies that support or provide environmentally friendly products and practices. These companies often encourage and benefit from new technologies that support the transition from carbon dependence to more sustainable alternatives.

It is worth mentioning that what is meant by this study is the combination of real investment and environmental investment as the orientation towards the possession of electric vehicles as a real asset has economic value and at the same time is considered an environmentally friendly product.

***Concept of Sustainable Development***

Definitions relating to sustainable development have varied according to time frames and intellectual affiliations, but they all have the same meaning. We will try to arrive at a definition through a set of definitions:

- Defined as: the conservation and sustainability of multiple resources in the environment to meet the current and socio-economic needs of human beings and to manage them with the finest available technology and science while ensuring the continuity of the resource for the well-being of future generations.) Salah Abbas, 2010, p. 17)
- It is also defined as the process of development that meets the aspirations and needs of the present without jeopardizing the ability of future generations to meet their needs. Abdelaziz Kassem, 2010, p. 171)

***Dimensions of Sustainable Development***

Sustainable development has focused on three fundamental dimensions of sustainability: environmental and social economic.

***1.Environmental dimension***

Based on the Earth Summit's final report on sustainable development, "Johnsburg", September 0110, with regard to the types of sustainable development and the basic objectives of its achievement, environmental sustainability in critical areas is as follows (Kadri Mohammed, 2013, p. 77, 76).

A. Water: aims to ensure adequate protection of watersheds, groundwater, freshwater resources and ecosystems.
B. Food: aims to ensure sustainable use and preservation of land, forests, water, wildlife, fish and water resources...
C. In the field of health: aims to ensure adequate protection of biological resources and regulations Ecological and life-supporting systems.

***Economic Dimension***

The inhabitants of industrialized States deplete natural resources twice as much as those of developing countries. Thus, sustainable development for industrialized States means steady reductions in consumption levels and patterns of energy degradation and natural resources. This may be due to improvements in the efficiency of use or even by changing lifestyles. Environmental pressures must not be exported to developing countries.

***Social Dimension***

Development cannot be achieved outside the social environment. Man is the means by which the economy cannot be dispensed with. The social component refers to the relationship between nature and human beings, to the promotion of people's well-being and to the improvement of access to basic health and education services, meeting minimum standards of security and respect for human rights, It also refers to the development of different cultures, diversity, pluralism and effective participation of grass-roots decision-making, It is a development aimed at achieving social development among all segments of society but not forgotten to preserve the wishes of future generations. " Kadri Mohammed, 2013, p. 81)

The shift towards electric vehicles can be said to be the achievement of sustainable development with the above three dimensions.

***Definition of Electric Vehicles***

The electric vehicle, or what is termed a clean or pure car, is: "The vehicle that relies on electric power for its operation. The vehicle's main motor is replaced by another electric engine. The electric motor equips the vehicle with the energy required by means of storage batteries for the electric current, with a large capacity, must be recharged at fixed charging stations. (Nadia, born, 2022, p. 6).

Electric vehicles are also defined as operating on an electric motor, rather than the traditional internal combustion engine known to generate power by burning a mix of fuel and gases. Therefore, electric cars are seen as an alternative to conventional cars used today, and the electric car will no doubt help address the problem of rising pollution, global warming and conservation of natural resources. (Essam, 2020).

***Global Electric Vehicle Market Size***

Research and development reports, according to the International Energy Agency, indicate that the number of EVs in the world reached 5.5 million in 2020, while there were only hundreds of them ten years ago. In a recent IEA study, the report predicts that the number of electric vehicle sales will rise to 150 to 250 million vehicles by 2030, and 548 cars by 2040, a significant rise that, of course, requires high investment and significant infrastructure. Most sales are known to be concentrated in Norway, Iceland, Sweden, the Netherlands and Finland, where Norway accounts for 49 per cent of global electric vehicle sales, while China and the United States share approximately 10 per cent of total sales. This is due to legislation and policies adopted by different parliaments (particularly in Scandinavia) that push for environmental conservation and green energy.

If we look for the global manufacturing aspect, it will be clear to us that there are a limited number of countries involved in manufacturing and marketing electric vehicles. China is the world's leading producer of electric vehicles, producing 1.2 million vehicles in 2019, followed by the United States of America and Norway.

***Advantages of electric cars***

There are many advantages that have made the electric vehicle compete with the conventional car, and even earn a place like the future car, the most important of which are:

- Low cost: Electric vehicles are less expensive than a conventional long-term car, for example, electric charging is cheaper than refueling them
- Its breakdowns are few: the electric car does not need periodic maintenance as much as the conventional car, because it does not contain an engine that includes a lot of mechanical parts such as the conventional car.
- Safe: Electric cars are safer; this is because they are less prone to fires or explosions
- Carbon emissions are reduced: electric vehicle traffic produces GHG emissions at less than half that of conventional cars, and electric vehicles can charge from a renewable electricity source such as solar panels, thereby reducing the proportion of respiratory diseases due to air quality and decreasing the proportion of petroleum dependence. (Nadia, born, 2022, p. 8).

***Field study***

***Research Sample Society***

The research community means the overall collection of elements to which the researcher seeks to disseminate findings related to the problem studied. The research community consists of a group of engineers and employees who work at Abdul Latif Jameel Automotive Company and numbered 87 individuals:

***Abdul Latif Jameel Group***

Abdul Latif Jameel Group is a multi-activity company founded in Saudi Arabia in 1945 by Abdul Latif Jameel (1909-1993), which includes the company's activities 7 key economic sectors and enjoys an active presence in more than 30 countries across 6 continents around the world.

The company's capital is SAR 1,000 million paid in full, and it is working to provide the option of financing cars with a financial leasing system, the company's vision to become a fully serviced and world-class financial company. Its mission is to pursue sustained and sustainable growth while maintaining maximum benefits for all stakeholders.

## Research Tool

Researchers relied on identification as a key tool to gather information from the research sample.

The resolution contained two main sections:

1. Section I: Includes personal data of search sample individuals.
2. Section II: This section contains a number (17) of phrases, requesting individuals to search for their response to what each phrase describes, according to the quinquennial lekert scale. These phrases have been distributed to the search hypotheses.

***Statistical methods used***

For accurate results as much as possible the spss statistical program has been used

***Statistical analysis***

Description of study sample according to personal and functional data The characteristics of the sample study can be presented according to certain personal and functional data as follows:

***Distribution of study sample by type***

**Table 1:** *Distribution of study sample by type*

| Type | Count | Percentage |
|---|---|---|
| Male | 76 | 91.6% |
| Female | 7 | 8.4% |
| Total | 83 | %100.0 |

***Distribution of study sample by age:***

**Table 2:** *Distribution of study sample by age*

| Age | Count | Percentage |
|---|---|---|
| Less 40 | 38 | 45.8% |
| More 40 | 45 | 54.2% |
| Total | 83 | %100.0 |

***Distribution of study sample by scientific qualification***

**Table 3:** *Distribution of study sample by scientific qualification*

| Qualification | Count | Percentage |
|---|---|---|
| University Degree | **30** | **36.1%** |
| Master Degree | **32** | **38.6%** |
| Doctoral Degree | **1** | **1.2%** |
| Other | **20** | **24.1%** |
| Total | **83** | **100.0%** |

***Distribution of study sample by job title***

**Table 4:** *Distribution of study sample by job title*

| Job Title | Count | Percentage |
|---|---|---|
| Employee | 28 | 33.7% |
| Administrative | 3 | 3.6% |
| Director | 22 | 26.5% |
| Other | 30 | 36.2% |
| Total | 83 | 100.0% |

***Distribution of study sample by experience***

**Table 5:** *Distribution of study sample by experience*

| Experience | Count | Percentage |
|---|---|---|
| **Less 5 years** | 1 | 1.2% |
| **5-10 years** | 16 | 19.3% |
| **More 10 years** | 66 | 79.5% |
| **Total** | 83 | 100.0% |

***Stability and honesty transactions:***

The constant coefficient shows the relative stability of results in sample responses if the questionnaire is returned or repeated again under the same circumstances and within a

specified period and the Alpha Kronbach coefficient, which is used to measure stability in the paragraphs of the questionnaire list, has been relied upon. The persistence factor for all paragraphs of the questionnaire was 0.901, meaning that the value of the constant factor for all paragraphs is high. Thus, it is above the minimum required to reach the level of acceptable stability (0.50). and thus, the degree of stability of all areas of the questionnaire is acceptable, and the value of the persistence factor for the paragraphs of the questionnaire can be explained in table 6:

**Table 6:** *Questionnaire Paragraphs and Constant Factor with Honesty Factor*

| No | Questionnaire Paragraph | Constant Factor | Honesty Factor |
|---|---|---|---|
| 1 | Switching to electric vehicles leads us to sustainable development | 0.907 | 0.952 |
| 2 | Improving the level of services provided by automotive companies creates sustainable development. | 0.894 | 0.946 |
| 3 | Providing staff with the right ways to organize and utilize their knowledge creates sustainable development. | 0.899 | 0.948 |
| 4 | Attention to sustainable development promotes an environment conducive to innovation that keeps pace with today's demands for a healthy environment. | 0.893 | 0.945 |
| 5 | Automotive companies encourage their employees to develop qualitative research that contributes to knowledge advancement and addresses sustainable development needs. | 0.901 | 0.949 |
| 6 | Encourage teamwork and positive interaction among workers leading to sustainable development in society. | 0.897 | 0.947 |
| 7 | Providing information increases the research staff's capabilities and innovates modern ways and methods to solve problems related to sustainable development. | 0.904 | 0.951 |
| 8 | Automotive companies are interested in analysing and diagnosing the economic and technological environment to build professional capacity according to environmental changes | 0.899 | 0.948 |
| 9 | Automotive companies are interested in developing intellectual and technical skills according to sustainable development needs | 0.896 | 0.947 |
| 10 | Automotive companies promote the healthy environment of human resources and believe that the sound mind of the healthy body | 0.894 | 0.946 |
| 11 | Facilitating exchanges and sharing of knowledge among workers leads to the creation of sustainable development. | 0.894 | 0.946 |

| | | | |
|---|---|---|---|
| 12 | Automotive operating systems promote cooperation between companies and facilitate information exchange and cooperation in finding solutions in scientific ways. | 0.896 | 0.947 |
| 13 | Cognitive skills define responsibilities that improve companies' financial and management performance to create a healthy and sustainable environment. | 0.904 | 0.951 |
| 14 | Automotive companies align automotive investment and promote sustainable development. | 0.895 | 0.946 |
| 15 | Sustainable development aligns society's requirements with the targeted performance of companies through a shift to alternative energies. | 0.901 | 0.949 |
| 16 | The application of sustainable development strives to achieve a degree of balance between environmental activities and the needs of society in the automotive sector according to global quality indicators and standards | 0.895 | 0.946 |
| 17 | Companies working in the automotive sector embrace community and environmental issues and provide appropriate solutions and consulting to enhance community responsibility by switching to electric vehicles. | 0.895 | 0.946 |
| 18 | Automotive companies are interested in strategic partnerships to make effective community and national contributions through the production of environmentally friendly vehicles. | 0.891 | 0.944 |
| 19 | Automotive companies provide the opportunity to gain competitive advantage by switching to electric vehicles, creating sustainable development. | 0.891 | 0.944 |
| 20 | Automotive companies promote innovative initiatives for their human resources to create environmentally friendly cars. | 0.884 | 0.940 |
| 21 | Automotive companies are interested in providing the appropriate information and technical environment to provide advisory service, feasibility studies and support for economic development. | 0.893 | 0.945 |
| | Total | **0.901** | **0.949** |

The factor of honesty indicates the suitability of the study tool (questionnaire) for the purpose for which it was used and the validity factor was calculated for all paragraphs of the questionnaire, as the previous table showed that all authenticity transactions for all paragraphs of the questionnaire were (0.949), This means that the value of honesty transactions for all

paragraphs of the questionnaire is high In this way, it is above the minimum level required to attain the level of acceptable honesty (0.60) and all areas of the questionnaire are considered to be honest.

***Descriptive statistics of the results of the field study***

**Table 7:** *Descriptive analysis of Questionnaire Paragraphs*

| No | Questionnaire Paragraph | Arithmetic Mean | Standard Déviation | Relative Importance | Différence Factor |
|---|---|---|---|---|---|
| 1 | Switching to electric vehicles leads us to sustainable development | 4.31 | 0.467 | 86.27% | 10.84% |
| 2 | Improving the level of services provided by automotive companies creates sustainable development. | 4.12 | 0.755 | 82.41% | 18.33% |
| 3 | Providing staff with the right ways to organize and utilize their knowledge creates sustainable development. | 4.30 | 0.487 | 86.02% | 11.33% |
| 4 | Attention to sustainable development promotes an environment conducive to innovation that keeps pace with today's demands for a healthy environment. | 4.31 | 0.697 | 86.27% | 16.17% |
| 5 | Automotive companies encourage their employees to develop qualitative research that contributes to knowledge advancement and addresses sustainable development needs. | 4.18 | 0.683 | 83.61% | 16.34% |
| 6 | Encourage teamwork and positive interaction among workers leading to sustainable development in society. | 4.58 | 0.521 | 91.57% | 11.38% |
| 7 | Providing information increases the research staff's capabilities and innovates modern ways and methods to solve problems related to sustainable development. | 3.99 | 0.862 | 79.76% | 21.60% |
| 8 | Automotive companies are interested in analysing and diagnosing the economic and technological environment to build professional capacity according to environmental changes | 3.54 | 0.786 | 70.84% | 22.20% |

| | | | | | |
|---|---|---|---|---|---|
| 9 | Automotive companies are interested in developing intellectual and technical skills according to sustainable development needs | 3.54 | 0.786 | 70.84% | 22.20% |
| 10 | Automotive companies promote the healthy environment of human resources and believe that the sound mind of the healthy body | 3.87 | 0.985 | 77.35% | 25.45% |
| 11 | Facilitating exchanges and sharing of knowledge among workers leads to the creation of sustainable development. | 4.30 | 0.487 | 86.02% | 11.33% |
| 12 | Automotive operating systems promote cooperation between companies and facilitate information exchange and cooperation in finding solutions in scientific ways. | 3.63 | 0.76 | 72.53% | 20.94% |
| 13 | Cognitive skills define responsibilities that improve companies' financial and management performance to create a healthy and sustainable environment. | 4.65 | 0.504 | 93.01% | 10.84% |
| 14 | Automotive companies align automotive investment and promote sustainable development. | 3.76 | 0.709 | 75.18% | 18.86% |
| 15 | Sustainable development aligns society's requirements with the targeted performance of companies through a shift to alternative energies. | 4.18 | 0.647 | 83.61% | 15.48% |
| 16 | The application of sustainable development strives to achieve a degree of balance between environmental activities and the needs of society in the automotive sector according to global quality indicators and standards | 4.14 | 0.627 | 82.89% | 15.14% |
| 17 | Companies working in the automotive sector embrace community and environmental issues and provide appropriate solutions and consulting to enhance community responsibility by switching to electric vehicles. | 3.86 | 1.072 | 77.11% | 27.77% |

| | | | | | |
|---|---|---|---|---|---|
| 18 | Automotive companies are interested in strategic partnerships to make effective community and national contributions through the production of environmentally friendly vehicles. | 4.00 | 0.911 | 80.00% | 22.78% |
| 19 | Automotive companies provide the opportunity to gain competitive advantage by switching to electric vehicles, creating sustainable development. | 4.14 | 0.646 | 82.89% | 15.60% |
| 20 | Automotive companies promote innovative initiatives for their human resources to create environmentally friendly cars. | 3.64 | 0.932 | 72.77% | 25.60% |
| 21 | Automotive companies are interested in providing the appropriate information and technical environment to provide advisory service, feasibility studies and support for economic development. | 3.78 | 0.585 | 75.66% | 15.48% |
| | General average of questionnaire paragraphs | 4.05 | 0.4342 | 80.93% | 10.73% |

The previous table shows the following:

- The total degree of responses of sample individuals to the questionnaire paragraphs was high, averaging 4.05 and with a standard deviation (0.4342).
- The highest responses for sample individuals came to the paragraph, which reads: "Knowledge skills define responsibilities leading to improved financial and management performance in companies to create a healthy and sustainable environment."
- The lowest answers came to sample individuals for each of the following:
- Paragraph: "Automotive companies are interested in analysing and diagnosing the economic and technological environment for building professional capacity according to environmental changes"
- The paragraph states: "Automotive companies are interested in developing intellectual and technical skills according to the needs of sustainable development."

***Assumption Tests***

The imposition of the study states:

There is a statistically significant relationship between investing in a sustainable environment and using electric vehicles.

To test this imposition, a number of tests were carried out as follows:

***A. Corelated Factor***

The following table shows the correlation factor between investing in a sustainable environment as an independent variable and using electric vehicles as a subordinate variable.

**Table 8:** *Corelated Factor*

| Variable | Test | Use of Electric Vehicles |
|---|---|---|
| Investing in the Sustainable Environment | Corelated Factor | 0.663 |
| | Morale | 0.000 |

The previous table shows a statistically significant correlation of 66.3% at a morale level of 0.05 between investment in the sustainable environment and the use of electric vehicles.

***B. Determination Factor***

| Independent Variable | Determination Coefficient | Modified Determination Factor | Standard Error |
|---|---|---|---|
| Investing in a Sustainable Environment | 0.439 | 0.432 | 0.4509 |

The previous table shows that the determination coefficient R2 = 0.439, which means that investment in the sustainable environment explains the 43.9% change in the use of electric vehicles. The rest is explained by other variables that did not enter the regression relationship, as well as random errors resulting from the sample withdrawal method, measurement accuracy and others.

***C. ANOVA Test variation analysis***

**Table 10:** *Variance Analysis ANOVA*

| Statement | Total Boxes | Freedom Grades | Average Boxes | F | Morale |
|---|---|---|---|---|---|
| Regression | 12.889 | 1 | 12.889 | | |
| Rest | 16.467 | 81 | 0.203 | 63.398 | 0.000 |
| Total | 29.355 | 82 | | | |

The previous table shows that there is a formal moral correlation between investment in the sustainable environment and the use of electric vehicles. This is demonstrated by the value of "F", which is statistically significant at a moral level of 0.05 and indicates the validity and substance of the relationship between the variables and the quality of the tyre and the reliance on its results without errors.

***Regression Analysis***

**Table 11: Analysis of Regression Results**

| | Sample | Non-standard Transactions | | Standard Transactions | T Test | Morale |
|---|---|---|---|---|---|---|
| | | Beta | Standard Error | Beta | | |
| 1 | Constant | 0.329 | 0.538 | | 6.12 | 0.000 |
| | Investing in the Sustainable Environment | 1.04 | 0.131 | 0.663 | 7.96 | .0000 |

The previous table shows that the "T" test values of the sustainable environment investment variable are morally significant at a moral level of 0.05. This shows the strength of

the declining relationship between investment in the sustainable environment and the use of electric vehicles.

The foregoing may be accepted, i.e.:

There is a statistically significant relationship between investing in a sustainable environment and using electric vehicles.

## Results

1- A statistically significant positive relationship between investment in the sustainable environment and the use of electric vehicles.
2- The study revealed that the orientation to use electric vehicles leads to development, and that many companies strive to be leaders in applying the concept of sustainable development, by encouraging innovations that reduce emissions and assume social and environmental responsibility that will preserve the environment.
3- "Knowledge skills work to identify responsibilities that improve corporate financial and management performance to create a healthy and sustainable environment."
4- Automotive companies align automotive investment and promote sustainable development.
5- Sustainable development aligns society's requirements with the targeted performance of companies through a shift to alternative energies.
6- The application of sustainable development strives to achieve a degree of balance between environmental activities and the needs of society in the automotive sector according to global quality indicators and standards.
7- Companies working in the automotive sector embrace community and environmental issues and provide appropriate solutions and consulting to enhance community responsibility by switching to electric vehicles.
8- Automotive companies are interested in strategic partnerships to make effective community and national contributions through the production of environmentally friendly vehicles.
9- Automotive companies provide the opportunity to gain competitive advantage by switching to electric vehicles, creating sustainable development.
10- Automotive companies are interested in analyzing and diagnosing the economic and technological environment to build professional capacity according to environmental changes.

## Recommendations

1- The need "for car companies to pay attention to sustainable development issues in order to analyse and diagnose the economic and technological environment for building professional capacities according to environmental changes"
2- Financial support for innovations in sustainable development, especially in automakers.
3- The need for automotive companies to take care of the development of intellectual and technical skills according to the needs of sustainable development ", through courses and workshops that build the intellectual capital skills of their human resources.

Future recommendations for research on switching to electric vehicles:

1- Technical study on the feasibility of switching to electric vehicles

2- Promote environmental accounting by switching to electric vehicles.
3- The extent to which the shift in the use of electric vehicles has enhanced countries' economies

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Essam bin Abdulaziz Al-Ammar - Associate Professor of Electrical Energy - King Saud University- essam@ksu.edu.sa.

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