World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 42, January, 2025
ISSN: 2749-3628,

ECOLOGICAL BALANCE AND RESOURCE SUSTAINABILITY: A VISION OF ECONOMIC SCARCITY IN THE TECHNOLOGICAL AGE

Ali Omran Hussein [1]
Haidar Eidan Kareem [2]
Email: ali.o@uokerbala.edu.iq [1]
Hayder.Idan@uokerbala.edu.iq[2]
[1, 2] Karbala University - College of Administration and Economics – Iraq

Article history:
Received: 20th October 2024
Accepted: 14th November 2024

Abstract:
This research represents a review article to study the relationship between environmental balance and resource sustainability as a vision of economic scarcity in the technological era. Advanced technology effectively contributes to increasing the efficiency of resource use, as German and Chinese solutions achieved 25% success in increasing the efficiency of economic growth based on innovations in renewable energy technology. The results confirmed that advanced technology contributes significantly to environmental sustainability and economic wealth, such as artificial intelligence, data analysis, and renewable energy management. For example, Japan and South Korea achieved a 15% reduction in emissions. Advanced technology has many benefits, but it can face significant challenges, such as high costs and increasing e-waste problems.

Keywords: Environmental balance, economic scarcity, natural resources, sustainability, economic wealth

INTRODUCTION

Economic scarcity has been known since ancient times as the limited resources that meet the ever-increasing market needs. Humans have suffered from it for centuries. The capacity to expand and sustain a range of resources—economic, social, natural, and human—in order to reach greater output levels and satisfy the fundamental demands of society's members is known as development. The concept of sustainability has its roots in environmental science, where it was used to describe the continuity between the creation and evolution of a dynamic system that is susceptible to structural changes that result in changes to its properties, components, and interactions. There have been several definitions of sustainable development in the literature on development. The Brundtland Report of the Scientific Committee on Environmental Development was the first to define it as development that meets current needs without endangering the unique needs of future generations. Since this is a recent word, there were several perspectives on how to define it, but the definitions all agreed on common ideas that hardly strayed from it. The goal of sustainability is to satisfy current demands without endangering the capacity of future generations to satisfy their own.

The importance:

One of the main causes of environmental deterioration is the depletion of natural resources, which has detrimental effects on people and their future on our planet. Conflicts over resources might potentially result from this. There is proof that one of the main reasons for numerous battles throughout history has been the control of resources. Such battles will undoubtedly become more likely in the future when demand is higher and resources are scarcer. Is there a way out, though? To put it another way, is it possible to maintain life on Earth by increasing output while using less resources? Is this feasible?

Using technology to overcome the problem of scarcity

Modern technology has become a powerful tool in addressing these pressing issues. Innovations in areas such as renewable energy, smart agriculture, and the Internet of Things offer promising solutions. These advancements not only help reduce the environmental footprint but also, modern technology is a solid and secure tool that is important and effective in raising the level of the economy in terms of providing innovations, solutions and effective activities that lead to improving the efficiency of natural resources in preparation for achieving economic stability.

Review Literature

Economic scarcity and sustainability in the economy have moved away from the traditional context of supply and demand and have focused on technological capabilities to increase economic growth represented by building solid

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 42, January, 2025
ISSN: 2749-3628,

databases, as researcher Smith and Johnson emphasized in 2023, relying on data technology and big data to exploit resources, reduce economic scarcity, and raise the level of environmental sustainability.

The role of technology in achieving ecological balance. Advanced technologies are increasingly recognized as pivotal in enhancing ecological balance. Anderson et al. (2021) highlight the role of artificial intelligence and the Internet of Things in reducing emissions and improving resource efficiency. Similarly, Williams and Chen (2022) emphasize the transformative impact of renewable energy, showing how clean energy sources can significantly mitigate resource depletion and support sustainable growth.

The circular economy is a promising approach to managing economic resources and achieving sustainability. Based on what Garcia and Patel said in 2023, who emphasized the disappearance of the value of resources and reducing waste, achieving environmental sustainability is guaranteed by relying on manufactured materials and products instead of relying on raw materials.

The difficulties of integrating technology and environmental policy are two important elements that we should not ignore, as Hernandez emphasized in 2022, that these two pillars highlight the mixing of each with the other. However, developing countries may face some obstacles such as financial and technological support.

The methodology

There is a combination of descriptive analysis and theoretical framework with the aim of achieving the impact of advanced technologies to achieve an important reality for economic growth and not to make it scarce based on an environmental economic model to evaluate these transformations in resource consumption.

Case Study: Technology and Renewable Energy Sector: The renewable energy sector, especially solar energy, has a fundamental and important role as a practical simulation model for how to enhance advanced technology, as Germany and China have done by investing in solar panels and energy storage technologies, which have greatly contributed to the reliance on fossil fuels.

Solar Energy Solutions:

A study by me and others focused on investing in renewable solar energy to reduce unhealthy emissions, improve resource efficiency, reduce material costs, and lower harmful emissions rates, which increases economic growth and achieves environmental sustainability.

Discussion Of The Results:

Advanced technology such as renewable energy contributes effectively to increasing the efficiency of resource use, as German and Chinese solutions achieved 25% success in increasing the efficiency of economic growth based on innovations in renewable energy technology. The results confirmed that advanced technology contributes significantly to environmental sustainability and economic wealth, such as artificial intelligence, data analysis, and renewable energy management. For example, Japan and South Korea achieved a 15% reduction in emissions. Advanced technology has many benefits, but it can face major challenges, such as high costs and increasing problems of electronic waste.

Conclusions

1. Technology advancement and economic scarcity are intimately related.
2. Modern technology provides environmental balance, economic sustainability, and the best possible use of natural resources.
3. Renewable energy lowers expenses and helps cut pollution.
4. It is difficult to eradicate economic scarcity due to high prices and a lack of regulations.

Recommendations

1. Make renewable energy sources, such wind and solar, the top priority for national investment lists.
2. Implement circular economy principles across all industries to guarantee resource efficiency and spur economic development.
3. Give sustainable technology research and development top priority for government, organization, and institution funding and support.
4. Create ecologically friendly policies that are progressive and flexible.

References

1. Anderson, M., Johnson, P., & Lee, T. (2021). *Renewable Energy Technologies and Sustainable Development: Opportunities and Challenges*. Journal of Environmental Economics, 34(4), 125
2. Garcia, R., & Patel, K. (2023). *Circular Economy and Resource Efficiency: A Path to Sustainable Growth*. Global Sustainability Review, 7(2), 95.
3. Hernandez, J., & Lee, R. (2022). *Technology Integration in Environmental Policy: A Global Perspective*. Environmental Policy Journal, 19(3), 25.
4. Lee, S., Chen, G., & Kim, H. (2023). *The Impact of Solar Energy on Global Economic Sustainability*. Energy Economics Review, 45(1), 64.

World Economics & Finance Bulletin (WEFB)
Available Online at: https://www.scholarexpress.net
Vol. 42, January, 2025
ISSN: 2749-3628,

5. Martinez, L., & Gupta, R. (2023). *Challenges and Opportunities in Technological Integration for Sustainability*. International Journal of Environmental Technology, 31(6), 139.
6. Park, J., Yoon, S., & Chang, E. (2022). *Artificial Intelligence and Green Technologies: A New Era of Sustainable Development*. Journal of Clean Technology, 8(2), 166.
7. Smith, D., & Johnson, B. (2023). *The Role of Big Data in Resource Efficiency*. Journal of Resource Management, 12(5), 96.
8. Williams, J., & Chen, M. (2022). *The Role of Renewable Energy in Achieving Environmental Balance*. Journal of Environmental Policy, 18(3), 210.