

A LITERATURE STUDY ON SUSTAINABILITY IN CONSUMPTION OF ENVIRONMENTALLY FRIENDLY PRODUCTS

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ABSTRACT

Purpose– The main purpose of this study to raise environmental awareness, support to producers, and contribute to new additions to sustainability.

Methodology– In this study, environmentally friendly technologies and sustainability projects implemented by companies in Turkey and all over the world are examined, and a literature review is conducted on articles written about sustainability in the consumption of environmentally friendly products.

Findings- With the rapid increase in population and the accelerated depletion of natural resources, significant environmental problems have arisen as a result of effects caused by humanity to meet energy needs. The concept of sustainability has been introduced and mentioned that it is a response to these environmental problems. Sustainability is essentially referred to as the ability to maintain a balance between the consumption of resources and their natural replenishment, ensuring that the needs of the present can be met without compromising the ability of future generations to meet their own needs. However, careful management and awareness are required to achieve sustainability, especially in light of two critical factors currently disrupting this balance: population growth and excessive consumption. To mitigate these issues, greater emphasis is being placed on environmentally friendly practices and products. Research into environmentally friendly product applications is being increased, and consumer attitudes toward green businesses are believed to play a crucial role in raising public awareness and encouraging positive behavior toward sustainable practices. Notable examples and case studies from around the world are showcased to highlight successful innovations in different sectors and the benefits of adopting environmentally friendly technologies.

Conclusion- In this study, we aim to examine environmentally friendly technologies and sustainability projects implemented by companies in Turkey and all over the world. And we have a purpose by underlying these initiatives to raise environmental awareness, inspire producers, and contribute to the sustainability. It is anticipated that environmental awareness will not only be raised through such studies but also that a deeper understanding of the importance of sustainable practices in preserving the environment for future generations will be promoted.

Keywords: Environmentally friendly products, sustainability, green consciousness, environmentally friendly technologies, green Business.

JEL Codes: Q55, Q56, Q57.

1. INTRODUCTION

The rapid urbanization and population growth experienced due to the impact of technological developments and industrialization, along with the increasing damage caused to nature by human activities, are becoming problems. Products characterized by minimum environmental impacts, renewable resource use, energy efficiency, and reduced harmful emissions are recognized as important for promoting sustainable living and reducing negative ecological impacts. Green-friendly products, also known as environmentally friendly or sustainable products, which are defined as those that do not pollute the world, cause the destruction of natural resources, and can be recycled or preserved, are designed to have minimum environmental impact throughout their life cycle. A wide range of industries, including energy, transportation, packaging, and household goods, are covered by green-friendly products. Renewable energy solutions such as solar panels and wind turbines, as well as daily consumer goods like biodegradable packaging and environmentally friendly cleaning agents, are included in this category. Global attention is being attracted by these products due to increasing environmental awareness and the urgent need to address climate change and resource depletion. It is deemed important that the dimensions of environmental awareness in consumers are determined and that marketing activities are shaped within this scope.

Examples of sustainability in various sectors are seen with the legal regulations that must be followed during the production phase and the increase in consumption awareness. It is believed that environmental awareness is being increased every day through the Sustainability Reports that are published annually by companies. Environmentally conscious technology and design applications are known to give producers the opportunity to reduce their waste and make a profit from waste. (Zhang, 1997).

In this study we aimed to emphasize the initiatives underlying the sustainable ecofriendly consumption nexus. Firstly consumption of eco-friendly products are introduced, in the second part we tried to give the meaning of the relationship between sustainability and consumption in these type of products. Then, the concept "green marketing" is underlined and in the fifth and sixth parts, the sustainable projects and of the companies and ecofriendly technologies are highlighted. ecofriendly products. And in the seventh part, articles and chapters about sustainable consumption of environmentally friendly products are represented in detailed.

2. CONSUMPTION OF ECO-FRIENDLY PRODUCTS

As consumers become more aware of the environmental impact of their choices, the consumption of eco-friendly products is becoming increasingly important. Often made from sustainable materials, these products use eco-friendly manufacturing processes and prioritize minimal waste and energy use. By choosing products that are biodegradable, recyclable, or made from renewable resources, consumers can help reduce pollution and conserve natural resources. Additionally, supporting companies that commit to sustainable practices can encourage broader industry changes, encouraging a market shift toward greener alternatives. As more people adopt these habits, the cumulative effect can lead to significant environmental benefits and contribute to a healthier planet for future generations.

Yücel and Ekmekçiler (2008) conducted a survey on the factors determining individuals' purchasing preferences and analyzing their environmental awareness levels in the Salihli district of Manisa province, and as a result of the surveys conducted with 400 individuals, it was observed that 55.75% of the individuals did not have information about green food products, and it was concluded that individuals were sensitive about green food products and environmental awareness in their purchases and consumption, and were willing to protect the environment, nature and health.

According to Tanner and Wölfing Kast (2003), consumers' attitudes towards the environment significantly affect their purchasing decisions. Their research shows that individuals with strong environmental concerns are more likely to purchase green products. Similarly, a study conducted by Vermeir and Verbeke (2006) emphasizes that personal values and beliefs about the environment play an important role in shaping consumer behavior towards sustainable consumption.

Various factors affect the consumption of environmentally friendly products. Paul, Modi, and Patel (2016) determined that perceived consumer effectiveness, environmental knowledge, and social influence are the main determinants. Consumers who believe that their purchasing decisions can positively affect the environment are more likely to purchase environmentally friendly products. In addition, environmental knowledge increases awareness and understanding of the benefits of green products, encouraging their consumption. Social influence, including peer pressure and societal norms, significantly influence consumer choices.

The impact of consuming environmentally friendly products is multifaceted and affects both the environment and the economy. According to a study conducted by Ottman, Stafford, and Hartman (2006), green consumption can lead to reduced environmental degradation by reducing pollution levels and preserving natural resources. In addition, the demand for environmentally friendly products encourages innovation and sustainable practices among businesses, leading to the development of green technologies and products.

From an economic perspective, the green market is considered to be showing significant growth. A study conducted by Nielsen (2015) suggests that sales of sustainable products are increasing, reflecting a change in consumer preferences. This growth not only supports the economy by creating new market opportunities, but also appears to encourage job creation in the green sector.

3. SUSTAINABILITY IN THE CONSUMPTION OF ECO-FRIENDLY PRODUCTS

Sustainability in the consumption of eco-friendly products is increasingly recognized as a vital component of achieving broader environmental goals. This approach emphasizes the need to shift consumer behavior toward products that have minimal impact on the environment throughout their lifecycle. For example, reusable water bottles and coffee cups significantly reduce plastic waste compared to single-use alternatives. These products not only reduce the volume of waste in landfills, but also minimize the demand for resources needed to produce single-use products. Another example is the use of biodegradable cleaning products, which are formulated to break down naturally, preventing harmful chemicals from contaminating water resources and ecosystems. Similarly, clothing made from organic cotton or recycled materials is gaining popularity in the fashion industry. Organic cotton farming protects soil health and reduces water pollution by avoiding the use of synthetic pesticides and fertilisers, while recycled fabrics reduce the need for raw materials and the environmental footprint associated with their production. (Ahmed, M. A et al, 2021) Moreover, the demand for energy-efficient appliances

such as LED bulbs and low-energy household appliances highlights a shift towards reducing energy consumption and greenhouse gas emissions. These examples demonstrate how the consumption of environmentally friendly products supports sustainability by reducing resource use, minimizing pollution, and encouraging responsible manufacturing practices. Supporting such products not only fosters a market that prioritizes environmental health, but also promotes a sustainable lifestyle that benefits individuals, communities, and the planet as a whole (Akdoğan, L., 2023). The impact of these changes is highlighted by research highlighting the economic and environmental benefits of green consumption. For example, Ottman, Stafford, and Hartman (2006) argue that green marketing and the adoption of environmentally preferable products can lead to significant reductions in environmental degradation, while Nielsen (2015) notes the increasing consumer demand for sustainable products, reflecting a shift in societal values toward sustainability. This growing trend is thought to not only push businesses to innovate and adopt more sustainable practices, but also play a significant role in addressing global environmental challenges such as climate change and resource depletion (Söderholm, P., 2020).

Research shows that consumers' motivations for purchasing environmentally friendly products are multifaceted. According to Thøgersen and Ölander (2006), environmental concern and a sense of personal responsibility are crucial in influencing environmentally friendly purchasing behavior. Similarly, Grankvist and Biel (2007) emphasize that consumers who perceive the environmental benefits of a product are more likely to make sustainable choices.

Despite positive motivations, several barriers hinder the widespread adoption of environmentally friendly products. Vermeir and Verbeke (2006) discuss how the higher cost and perceived lower quality of sustainable products compared to conventional alternatives can deter consumers. In addition, Jansson et al. (2010) find that lack of information and the complexity of environmental claims contribute to consumer skepticism and reluctance.

Policy and institutional initiatives play an important role in shaping consumer behavior. Peattie (1999) suggests that companies that adopt transparent and genuinely sustainable practices can build consumer trust and lead to more significant shifts toward environmentally friendly product choices.

The environmental impact of increased consumption of environmentally friendly products is an ongoing topic of research. Kollmuss and Agyeman (2002) reviewed the effectiveness of these products in reducing overall environmental footprints and concluded that, while they can make a positive contribution, their impact is often moderated by factors such as overall consumption levels and product life cycle assessments.

4. GREEN MARKETING

Green marketing appears to have emerged in the late 20th century, particularly after the first Earth Day in 1970, which increased global environmental awareness. It appears to have developed further with the introduction of the term "sustainable development" in the 1987 Brundtland Report, which emphasized the need for economic growth without endangering environmental health. Green marketing has evolved significantly since its inception in the late 20th century. Early efforts focused on addressing environmental concerns through regulatory compliance and pollution control. However, as environmental awareness has increased, businesses have begun to realize the potential of green marketing to differentiate themselves from competitors and attract environmentally conscious consumers (Bozlagan, R., 2005).

Ottman, Stafford, and Hartman (2006) argue that the evolution of green marketing can be divided into three stages: the ecological stage (1975-1985), the environmental stage (1986-1995), and the sustainable stage (1996-present). The ecological stage focuses on reducing pollution and conserving resources. In the environmental stage, companies have incorporated green messages into their marketing strategies. The sustainable stage emphasizes long-term environmental and social sustainability.

Green marketing, also known as environmental marketing, involves promoting environmentally friendly products and practices. It has gained significant momentum as both consumers and businesses become increasingly aware of environmental issues. (Erbaşlar, G., 2012) Green marketing can be defined as the marketing of products that are assumed to be environmentally safe. According to Peattie and Crane (2005), it involves promoting products with lower environmental impacts and adopting practices that increase corporate environmental responsibility.

Successful green marketing strategies often include a combination of product innovation, eco-labeling, and sustainable supply chain management. Product innovation involves developing environmentally friendly products that reduce environmental impact. Companies such as Patagonia and Tesla have been seen to successfully use this strategy to enhance their brand image and attract a loyal customer base.

Eco-labeling is another important strategy that provides consumers with information about the environmental benefits of a product. Labels such as Energy Star, USDA Organic, and Fair Trade Certified help consumers make informed purchasing decisions. According to Thøgersen (2000), eco-labeling can significantly influence consumer behavior, especially when consumers perceive the label as trustworthy and credible.

Sustainable supply chain management involves ensuring that all stages of production and distribution are environmentally friendly. Companies such as IKEA have implemented comprehensive sustainability programs that include sourcing materials from sustainable forests and reducing carbon emissions throughout the supply chain (Gimenez and Sierra, 2013).

Despite its potential benefits, green marketing faces several challenges. One major challenge is greenwashing, where companies falsely claim or exaggerate the environmental benefits of their products. This practice can erode consumer trust and damage the credibility of truly sustainable brands (Delmas and Burbano, 2011). Another challenge is the higher cost of producing environmentally friendly products. Consumers often expect green products to be priced similarly to conventional products, making it difficult for companies to absorb the additional costs of sustainable production (Peattie and Crane, 2005).

Consumer perceptions play a significant role in the success of green marketing. Research shows that while an increasing number of consumers prefer green products, there is often a gap between their attitudes and actual purchasing behavior. This phenomenon, known as the attitude-behavior gap, is influenced by factors such as price, convenience, and skepticism of green claims (Vermeir and Verbeke, 2006).

Laroche, Bergeron, and Barbaro-Forleo, 2001, found that consumers are more likely to purchase green products when they perceive them to be of higher quality or when they feel a personal responsibility to protect the environment. Demographic factors such as age, income, and education level can also influence green purchasing decisions.

5. SUSTAINABILITY PROJECTS OF COMPANIES

Sustainability projects undertaken by companies are comprehensive initiatives that aim to integrate environmental, social and economic considerations into business operations and strategies. These projects typically cover a wide range of activities, such as reducing carbon emissions, increasing energy efficiency, promoting resource conservation and ensuring ethical supply chain practices. Companies engage in sustainability projects not only to comply with regulatory requirements, but also to meet increasing consumer demand for environmentally responsible products and services. By adopting sustainable practices, companies aim to minimize their ecological footprint, positively contribute to the communities in which they operate and ensure long-term economic viability. These projects typically involve a collaborative approach that involves stakeholders such as employees, customers, suppliers and local communities to promote a culture of sustainability. In addition, sustainability projects often include transparent reporting and continuous improvement mechanisms to monitor progress and make necessary adjustments, and reflect a commitment to sustainable development and corporate social responsibility.

Table 1 shows the sustainability projects that companies from around the world and Turkey have undertaken in recent years.

Table 1: Sustainability Projects of Companies

| | |
|-----------------|--|
| OMO | <ul style="list-style-type: none"> • Our fully recyclable 1690 ml liquid detergent bottles are now made from 25% recycled plastic. • OMO Liquid Detergents claim that by changing the content of their detergents, even the toughest stains are removed in the first wash, contributing to less water consumption in the world. |
| AKBANK | <ul style="list-style-type: none"> • In line with the Sustainable Development Goals; <u>Sustainable Finance</u> to support a more sustainable economy, <u>Ecosystem Management</u> to improve business and financial health, <u>Climate Change</u> to reduce operational and portfolio emissions, and <u>People and Society</u> to empower our employees and communities. Akbank aims to reduce the impact of its credit portfolio on climate change by 2030. |
| ÜLKER | <ul style="list-style-type: none"> • 26 thousand tons of carbon emissions have been prevented with renewable energy supply. • Ülker, Turkey's leading food company, which continues its sustainability efforts with the 'waste-free company' model, has been growing without increasing carbon emissions since 2014 in its Sustainability Report, where it shares its economic, social and environmental activities with the public every year. |
| ABDI IBRAHIM | <ul style="list-style-type: none"> • It supports local entrepreneurs with social innovation programs, improves social responsibility with practices such as volunteer hours per employee, supports women's employment and adopts a fair economic development plan. |
| ALLIANZ | <ul style="list-style-type: none"> • In order to create a more sustainable life model, Allianz has increased the share of electricity produced from renewable sources in electricity consumption to 1.5% by making renewable energy investments with the use of windmills. • The institution also supports sustainable business models, donates to civil society organizations and prioritizes women's employment. |
| IKEA | <ul style="list-style-type: none"> • The Swedish furniture maker sources nearly half of its wood and cotton for its textiles from sustainable sources. • All are produced to a standard that minimizes water pollution through organic farming practices. |

| | |
|--------------------------|---|
| ECZACIBAŞI VITRA KARO | <ul style="list-style-type: none"> • They contribute to green building practices with our series containing up to 30% recycled material. • In 2022, they provide all of the electrical energy used in our Bozüyük factory from I-REC certified renewable energy sources. • They have produced the world's first and only 100% recycled ceramic sink. Thanks to the sinks that give new life to materials considered waste, the impact of the production process on global warming is reduced by 30% per product. |
| ARÇELİK | <ul style="list-style-type: none"> • Within the scope of Extended Producer Responsibility, in order to restore products to nature and encourage their evaluation as resources, they established Waste Electrical and Electronic Equipment (WEEE) recycling facilities in Eskişehir and Bolu in 2014. • Recycled PET bottles are used in washing machines, dishwashers and air conditioners. • Eight tons of recycled waste fishing nets and 111.7 tons of industrial yarn waste were transformed into oven, washing machine, dryer and dishwasher parts. • With the water efficiency projects implemented in different operations, a reduction of 18% in water withdrawal in Turkey, 13% in Romania, 9% in Russia, 29% in Thailand and 13% in South African operations compared to 2019 was achieved. |
| SAMSUNG | <ul style="list-style-type: none"> • Samsung, one of the leading brands in home appliance production in Asia, has announced that it will now use more recycled plastic in its products and plans to increase the recycled plastic rate to 30% by 2024, while also supporting plastic recycling scientifically with a new type of polypropylene they developed for use in washing machine drums. |
| MICROSOFT | <ul style="list-style-type: none"> • Microsoft has taken some big steps in sustainability in recent years, including diverting more than 60,000 metric tons of waste from landfills and funding 20 different water renewal projects in 2020. |
| APPLE | <ul style="list-style-type: none"> • All energy spent at their headquarters called Apple Park is provided by renewable energy sources. • With Apple Park, the company achieved carbon neutrality in 2020 and managed to emit 75% less carbon emissions in 2021 despite increasing its production lines and products compared to 2015. • They use 75% less plastic in their product packaging compared to 2015. |

Source: <https://www.jamesdysonaward.org/en-US/2024/project/ergo-mow>.

6. ENVIRONMENTALLY FRIENDLY TECHNOLOGIES

Eco-friendly technologies, often referred to as green or clean technologies, encompass a range of innovations designed to minimize environmental impact and promote sustainability. These technologies aim to reduce pollution, conserve resources, and increase energy efficiency across a variety of sectors, including energy, transportation, manufacturing, and agriculture. They leverage advances in science and engineering to create solutions that mitigate the negative impacts of human activities on the environment. By focusing on renewable energy sources, waste reduction, and sustainable materials, environmentally friendly technologies help reduce greenhouse gas emissions and preserve natural ecosystems. Furthermore, they play a significant role in stimulating economic growth by creating new industries and business opportunities centered around sustainability. As societies around the world recognize the urgency of addressing climate change and environmental degradation, the development and adoption of these technologies is increasingly important to achieve a more sustainable and resilient future.

Table 2 lists environmentally friendly technologies. There are also awards that have been deemed worthy of the James Dyson Award and technologies that are eligible for application for 2024 are also included.

Table 2: Environmentally Friendly Technologies

| | |
|------------|--|
| LifeStraw | A social responsibility project developed by the Vestergaard Frandsen Group of Danish origin. It is designed to eliminate epidemics caused by drinking water shortages. It can be defined as a portable water purification filter. |
| TonerPave | A new asphalt with high recycled content and reduced carbon footprint. It is made using toner powder obtained from recycled toner cartridges. |
| eWood | Produced in Australia using 100% recycled materials. It is a unique plastic wood produced from mixed plastics of previously landfilled products such as collected computers, televisions, white goods, commercial equipment, car parts and printer cartridges. |
| Homebiogas | It produces biogas by anaerobically fermenting organic matter. Acceptable types of organic matter include meat, dairy products and animal manure. Anaerobic digestion is carried out by bacteria living inside the system. As a result, HomeBiogas operates without electricity. |

| | |
|--------------|--|
| Orbisk | Orbi, a startup, is offering a fully automatic food waste monitor to help professional kitchens reduce food waste. |
| Seabin | Once positioned, the device passes sea/ocean water through it, collecting all the dirt and helping to create a cleaner environment. It is designed to be especially useful in port areas where pollution is most noticeable and accumulates. |
| B-Fresh | A vegan and gluten-free gum that does not use salt or sugar. With four flavors to choose from, B-Fresh is a gum that both patients and dentists can agree to chew. |
| Ergo-Mow | A bicycle modification designed to provide efficient and ergonomic improvements in agricultural tasks such as weeding and harvesting, in response to labor shortages in tropical regions. |
| Green Steps | A vertical garden made from non-recycled, reused shoes, plastic products and furniture. It is a sustainable design that focuses on shoes and plastics with complex fabrics. |
| EcoPod | A biodegradable compost basket that produces slow-release fertilizer for plants. |
| Zero Brush | A biodegradable toothbrush with toothpaste as a base material, designed to solve the global plastic pollution problem caused by traditional plastic toothbrushes and toothpaste tubes. |
| (Sub)Ambient | An easy-to-produce, biodegradable passive cooling material derived from food waste. Provides electricity-free cooling of over 5°C even in direct sunlight, without the harmful side effects of urban heat islands, high electricity bills or ozone-destroying refrigerants. |
| AquaReSmart | Efficient storage and distribution of greywater from washing machines, re-using it for irrigation, toilet flushing and cleaning. Facilitating greywater reuse, reducing drinking water usage and promoting sustainability, the app encourages users to adopt and share tips for sustainable practices. |
| Aqua Breeze | A sustainable device that condenses and collects fresh water from humid air above the seas and polluted water bodies using wind and solar energy. Thus, it offers an economical and environmentally friendly solution to global water scarcity. |

Source: <https://www.amesdysonaward.org/tr-TR/2024/project/green-steps>.

7. LITERATURE REVIEW OF SUSTAINABILITY IN CONSUMPTION OF ENVIRONMENTALLY FRIENDLY PRODUCTS

In this part, articles and chapters about sustainable consumption of environmentally friendly products are represented in detailed.

Table 3: Literature Review of Sustainability in Consumption of Environmentally Friendly Products

| Author(s) | Journal/Book Name | Country | Year |
|--|---------------------------------------|--------------------------|------|
| Geissdoerfer, M. et al. | Journal of cleaner production | United Kingdom | 2017 |
| Kirchherr, J., Reike, D., & Hekkert, M. | Resources, conservation and recycling | The Netherlands | 2017 |
| White, K., Habib, R., & Hardisty, D. J. | Journal of marketing | Canada | 2019 |
| Sheth, J | Journal of business research | USA | 2020 |
| Camilleri, M. A. et al. | Sustainability | Italy | 2023 |
| Maarif, M. R., Syafrudin, M., & Fitriyani, N. L. | Sustainability | South Korea Indonesia | 2023 |
| Ahn, I., & Kim, S. H. | Sustainability | USA | 2023 |
| Nazrun, T. et al | Sustainability | Australia | 2023 |
| Mutanov, G et al. | Sustainability | Kazakhstan Finland | 2023 |
| Davidenko et al. | Sustainability | Kazakhstan | 2024 |

Geissdoerfer, M. et al. (2017) analyzed how companies are adopting circular economy principles to create more sustainable products. Their study found that businesses that integrate circular practices into their operations not only reduce environmental impact but also appeal to a growing segment of environmentally conscious consumers.

Kirchherr, J., Reike, D., & Hekkert, M. (2017) provided a comprehensive review of the circular economy concept, emphasizing its potential to reduce waste and promote the reuse of resources. This shift from a linear to a circular model is seen as a crucial development in achieving long-term sustainability in consumption.

White, K., Habib, R., & Hardisty, D. J. (2019) suggested that the pandemic has accelerated the trend towards more conscious consumption, with consumers increasingly prioritizing sustainability in their purchasing decisions.

Sheth, J (2020) studied, the pandemic has heightened awareness of the fragility of global supply chains and the importance of local, sustainable production. Consumers are increasingly prioritizing products that are not only environmentally friendly but also ethically produced and sourced locally. This shift in consumer priorities is expected to have a lasting impact on the market for sustainable products.

Camilleri et al. (2023) conducted a systematic literature review focusing on consumer perceptions of sustainable products. Their research emphasizes the need for companies to adopt a holistic approach to sustainability, addressing all three dimensions of the triple bottom line—economic, environmental, and social. The study found that while consumers are increasingly aware of the importance of sustainability, the market share for sustainable products remains low, partly due to inconsistent messaging and a lack of comprehensive understanding of consumer priorities.

Maarif et al. (2024) investigated consumer reviews of eco-friendly products on Amazon, using natural language processing to uncover insights into sustainability features that resonate with customers. The study highlights the importance of aligning product design with consumer expectations to enhance satisfaction and promote sustainable consumption. The findings suggest that integrating qualitative and quantitative methods can help companies optimize their product designs to meet environmental goals effectively.

Ahn, I., & Kim, S. H. (2023) studied a scale for measuring motivation in pro-environmental behavior. It discusses the development of a new scale, the Positive Consequences Scale (PCS), which measures the perceived positive consequences of pro-environmental behavior. The scale was developed based on the value-belief-norm theory, which posits that people are more likely to engage in pro-environmental behavior if they believe it will have positive consequences for themselves and others. The PCS was found to be a reliable and valid measure of motivation for pro-environmental behavior. They also discussed the results of a study that examined the relationship between the PCS and pro-environmental behavior. The study found that people who scored higher on the PCS were more likely to engage in pro-environmental behaviors, such as recycling and conserving energy. This suggests that the PCS may be a useful tool for predicting and encouraging pro-environmental behavior. Finally, the article discusses the implications of the findings for environmental education and policy. The authors suggest that interventions that focus on the positive consequences of pro-environmental behavior may be more effective in promoting pro-environmental behavior than interventions that focus on negative consequences.

Mutanov, G. et al (2023) studied about sustainability driven green innovation in the aerospace industry. It discusses the use of an intelligent decision support system to make decisions in the aerospace industry. The article details a new method for automatic text summarization, which outperforms traditional methods. The method is based on calculating the importance of sentences through a common statistical measure, TF-IDF. The article explores different algorithmic and visualization approaches in order to determine the optimal method for displaying the results. The article concludes by stating the new GreedySummariser method is the most efficient method for abstracting space text.

Nazrun, T. et al (2023) studied biopolymers as cladding materials. It discusses the sustainability and various types of biopolymers that can be used as cladding. The authors explore the manufacturing methods, properties, and applications of biopolymer materials. They also discuss the challenges and future prospects of using biopolymers as cladding materials. Some of the key points from this article are that biopolymers are more adaptable and environmentally benign than traditional polymers. They are also biodegradable, which makes them a sustainable option for cladding materials. However, the rate of biodegradability varies depending on the type of biopolymer. Overall, this article provides a comprehensive overview of the potential of biopolymers as sustainable cladding materials.

Davidenko et al. (2024) discusses the challenges of changing the economic situation in an industrial region of Kazakhstan through eco-branding. The authors analyze publicly available data sets to assess the feasibility of eco-branding as a development strategy.

8. CONCLUSION AND IMPLICATIONS

The dizzying increase in the world population, along with globalization and unstoppable consumption, has led to the depletion of limited resources. This situation is perceived as a threat to the survival of humanity, making it necessary for new solutions to be found. The strain on natural resources has been intensified by these factors, and as a result, concerns about the sustainability of human activities have been heightened. The search for alternatives that can ensure the longevity of these resources and the well-being of future generations is being increasingly prioritized. This study aims to identify and highlight novel methods for creating new pathways to the future.

This article is presented as a literature study on environmentally friendly marketing, green technologies, and sustainability practices used both globally and in Turkey. Aims are set by the article to guide researchers by presenting projects, examples, and studies conducted in this field. Through this study, it has been observed that awareness of environmentally friendly products is rapidly increasing worldwide, including in Turkey. However, it has also been noted that the sufficient level of

awareness and adoption has not yet been reached, particularly in Turkey. It is recommended that further studies be carried out to increase awareness on this issue. Additionally, ongoing efforts to promote green technologies and sustainable practices are considered vital in addressing the pressing challenges posed by limited resources and environmental degradation. Awareness-raising activities should be conducted to ensure that scarce resources are preserved and renewed for future generations. The need for comprehensive and continuous education on the importance of sustainability and environmentally friendly practices is emphasized, as it is believed that such efforts will contribute to the long-term preservation of natural resources and the protection of the environment for future generations.

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