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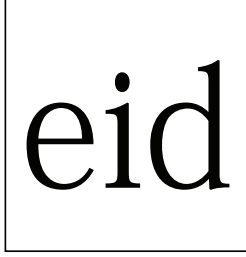
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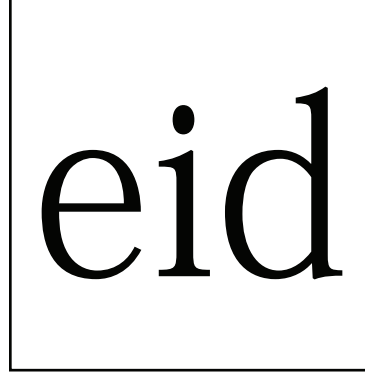
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Research Article | Araştırma Makalesi

Planned Obsolescence and Sustainability in the Context of Corporate Communication Strategies: A Qualitative Study on Consumers

Kurumsal İletişim Stratejileri Bağlamında Planlı Eskitme Ve Sürdürülebilirlik: Tüketiciler Üzerine Nitel Bir Çalışma



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Abstract

Planned obsolescence is defined as determining a product's lifespan before its launch and planning the product life cycle within a specific strategy. Communication activities within planned obsolescence strategies aim to ensure consumption continuity by increasing sales, but they conflict with the concept of sustainability, which aims to meet today's needs without compromising future generations' needs. This study aims to measure how consumers perceive communication efforts related to these concepts. The study's universe consists of consumers in Turkey who are conscious of sustainable consumption. The research, conducted with 11 sustainably conscious consumers, collected data on their sustainable behaviors, knowledge of communication activities within the frameworks of sustainability and planned obsolescence, and their evaluations of these concepts. The results showed that consumers with a sustainable lifestyle were unaware of companies' sustainability communication efforts and found them insufficient. Additionally, they were influenced by communication activities within planned obsolescence strategies and felt these efforts were inconsistent with sustainability. This study is important for evaluating sustainability communication efforts and company approaches in this field from the perspective of consumers who value sustainable living in Turkey.

Keywords: Corporate Communication, Planned Obsolescence Strategies, Sustainability Communication.

Öz

Planlı eskitme kavramı, bir ürünün kullanım süresinin, ürün piyasaya sürülmeden önce belirlenmesi ve ürün yaşam eğrisinin belirli bir strateji çerçevesinde planlanarak oluşturulması olarak tanımlanmaktadır. Planlı eskitme stratejileri çerçevesinde gerçekleştirilen iletişim faaliyetleri, üreticilerin daha fazla satış yaparak tüketim sürekliliğini sağlamayı amaçlarken, bugünün ihtiyaçlarını gelecek nesillerin ihtiyaçlarını karşılama kabiliyetinden ödün vermeden karşılamayı amaçlayan sürdürülebilirlik kavramı ile çelişmektedir. Bu çalışma, bu iki kavram bağlamında gerçekleştirilen iletişim çalışmalarının tüketiciler tarafından nasıl algılandığını ölçmeyi amaçlamaktadır. Çalışmanın evrenini, Türkiye'de sürdürülebilir tüketim bilincine sahip tüketiciler oluşturmaktadır. Sürdürülebilir tüketim bilincine sahip 11 tüketici üzerinde gerçekleştirilen araştırmada, katılımcıların sürdürülebilir davranışları, sürdürülebilirlik ve planlı eskitme stratejileri çerçevesinde gerçekleştirilen iletişim çalışmalarına dair bilgi düzeyleri ve bu iki kavramı değerlendirmeleri sonucunda veriler elde edilmiştir. Sonuç olarak, sürdürülebilir bir yaşam tarzına sahip tüketiciler, kurumların gerçekleştirdikleri sürdürülebilirlik iletişim çalışmalarından haberdar olmadıklarını ve bu çalışmaları yeterli bulmadıklarını belirtmişlerdir. Ayrıca, planlı eskitme stratejileri kapsamında gerçekleştirilen iletişim çalışmalarından etkilendiklerini ve bu çalışmaların sürdürülebilirlik ile bir tutarsızlık yarattığını ifade etmişlerdir. Bu çalışma, Türkiye'de sürdürülebilir yaşama önem veren tüketicilerin, kurumların gerçekleştirdiği sürdürülebilirlik iletişim çalışmalarını değerlendirme ve bu alandaki kurum yaklaşımlarını gözler önüne serme açısından önem taşımaktadır.

Anahtar Kelimeler: Kurumsal İletişim, Planlı Eskitme Stratejileri, Sürdürülebilirlik İletişimi.



Introduction

In the 19th century, the “throwaway culture,” “disposable culture,” or “throwaway ethic” was born to sustain economic growth and to find a solution to the overproduction problem (Slade, 2007). Manufacturers encountered a problem while producing long-lasting and reliable products. This issue resulted in the purchase cycles of durable, long-lasting products slowing down, leading to a slow sales growth rate. Thus, planned obsolescence (PO) has become a frequently applied method to ensure continuity in the economy and to increase the profitability of companies.

Within the scope of PO practices, companies determine the product lifecycle before launching a product into the market (Cooper, 2005; Longmans, 1960; Slade, 2007). According to Longman (2006) “Its use as a strategy to influence either the shape of the product or the mental attitude of the consumer represents the quintessence of the throwaway spirit.” (p.37). Although PO practices were first observed in the automotive industry in a historical process, they are also frequently applied in the ready-to-wear, plant breeding, technology, and telecommunications sectors (Baša & Szabó Farkas, 2022; Junge & van der Velden, 2018; Rivera & Lallmahomed, 2016). It is also observed that the development of products in the current class, especially in the technology or ready-to-wear industry, is used more frequently (Cox et al., 2013)

Thus, institutions began to employ various communication strategies for the PO method they implemented to increase the frequency of product purchases by consumers (Utaka, 2000). This situation has led to numerous studies on technological developments and trend evolutions for new products. PO has been used not only to increase sales but also as a strategy to maintain market competition and engage with competitors (Guiltinan, 2009). Hence, within the scope of PO, consumers are directed towards the consumption of new products and similarly, they tend to replace their existing products within a certain period to attain a particular prestige and status, even if the products do not break or malfunction (Cox et al., 2013; Echegaray, 2016).

There is an inherent contradiction between the concept of sustainability, defined as using today’s resources without compromising the needs of future generations, and PO strategies (Brundtland, 1987). With the growth of the World population, there is an increase in waste generation due to the increase in consumption (Bakhiyi et al., 2018), water consumption, and depletion of natural resources, which all affect climate change as well (Koop & van Leeuwen, 2017; Singh & Singh, 2017). Thus, various studies are being conducted on reducing consumption levels and promoting sustainable consumption. The UN has also targeted SDG Development Goal 12 which is responsible consumption and production that aims to reduce waste through repairing, reusing, and recycling (Adrian et al., n.d.). So with communication strategies, companies should address these issues to create awareness among their consumers. More sustainable communication strategies require integrating customer-oriented aspects with a focus on product and production issues, developing innovative solutions that guide customers towards new production and consumption systems. This approach aims to enhance resource efficiency and reduce pollution, ensuring product quality is not compromised by production concerns (Peattie, 2016).

There are many studies in the literature addressing PO and sustainable consumption. Some of these studies show that consumers demonstrated a high level of awareness regarding sustainability challenges in the industry (Hamatake & Keaney, n.d.; Yurtsever,

2023). However, a study on smartphones revealed that smartphone durability and sustainability were not primary concerns when deciding to replace their devices. While all participants viewed more sustainable smartphone options positively and expressed a desire to adopt more sustainable consumption habits, they acknowledged the existence of various barriers and practical limitations that hinder their ability to act accordingly (Sjöstrand et al., 2022). A similar study also shows that small household appliances have less shorter lifespans, whereas larger technical devices like TVs and laptops last longer (Hennies & Stamminger, 2016)

Therefore, this study aims to measure consumers' awareness of PO strategies and sustainability communications organizations implement. To achieve this, an in-depth analysis will be conducted with consumers in the technology and ready-to-wear sectors to assess their awareness of these issues, thereby evaluating the sustainability and PO communications carried out in Turkey.

The Concept and Communication of Planned Obsolescence

PO term defined during the World Economic Crisis by Bernard London in 1932 with his work titled "Ending the Great Depression with Planned Obsolescence". The crisis, which was actually driven by overproduction, occurred when manufacturers, after expanding their production capabilities, were unable to clear the large surplus they had accumulated due to a lack of sufficient demand (London, 1932).

According to the Longmans, (1960) the PO term is defined as unethical strategies that limits the life cycle of products. According to Cooper, (2010) PO is "the outcome of a deliberate decision by suppliers that a product should no longer be functional or desirable after a predetermined period, remains entrenched in industrialized economies despite criticism over many years" (p.4). This term can also be described as deliberately reducing the lifespan of products to encourage greater consumption (Slade, 2007).

There are some advantages of using PO strategies. For manufacturers, using PO strategies increases continuing demand for their products and also increases their sales as a result of increasing profits (Longmans, 1960). PO also has advantages for the economy, such as increasing sales in mature markets by supporting mass consumption, which will support economic growth. Companies also face several disadvantages, including legal challenges related to waste management and PO laws imposed by local governments, as well as increased consumer dissatisfaction resulting from rapid consumption.

In the 1870s, Americans began using disposable collars, and by the 1880s, sanitary pads and tampons were introduced (Rivera & Lallmahomed, 2016, p.121). At those years, one of the industries that implemented PO is the automotive sector. In the 1910s and 1920s, this strategy was first applied by brands like Ford and Chevrolet (Longmans, 1960, p.52). In the 1920s, General Motors continuously produced technologically advanced cars in order to compete with Ford, while also focusing on the design of automobiles to keep up with fashion trends. In doing so, the company utilized both technological and psychological obsolescence (Slade, 2007). General Motors's strategy led to dissatisfaction as consumer preferences shifted towards smaller cars, such as the Volkswagen Beetle. This demonstrates that PO can sometimes backfire and there are different types of it (Cooper, 2013).

Longmans, (1960) divided the PO term into several sub-units according to functionality, quality, and desirability (Guiltinan, 2009). According to functionality and quality, also

called functional obsolescence, the product becomes outdated because of technological improvement or product break down or wear out in time. Consumers want to buy new products due to technological developments or unusable products (Levinthal & Purohit, 1989; Rai & Terpenney, 2008). According to desirability, also called psychological obsolescence, the product loses its attractiveness and satisfaction level (Cooper, 2005).

It is also found in such a distinction as systematic obsolescence. This kind of obsolescence is similar to technological obsolescence. Consumers generally stop using the product because no maintenance is available for it (Guiltingan, 2009). CD and DVD players that have been marketed can be a good example of this area. The last type of PO relates to product failure and breakdown, where products are intentionally designed to fail after a predetermined number of uses. This design compels consumers to replace the product (Rivera & Lallmahomed, 2016, p.120).

Longmans, (1960) stated that consumers' buying behavior occurs more for psychological reasons than functional reasons. As the income of the consumer increases, the consumer prefers to replace the product rather than maintain or repair it because of the waste of time (McCullough, 2007). A study conducted on phone users found that they do not prioritize the lifespan of their phones when making purchasing decisions (Çerçi & Tosun, 2021) and generally tend to replace their electronic devices every five years and their phones every two years (Cox et al., 2013). Another factor supporting PO is the issue of product repairability. A study found that one-third of broken devices discarded by participants could have been repaired. However, due to the high cost of repairs, consumers more often choose to replace the product with a new one (Cooper, 2005). It has also been shown that purchasing these products often serves as a marker of social status (Cooper, 2005; Cox et al., 2013; Echegaray, 2016). This is not limited to phones; much of the communication efforts by telecommunications companies are also focused on PO, for which they have been criticized (Wieser, 2016).

Academic researches on PO indicates that most academic studies primarily focus on product durability, followed by product design (Zallio & Berry, 2017), sustainability, and sustainable development (Satyro et al., 2018; Vail, 2022). A third cluster of academic research topics includes e-waste, recycling, political economy, product lifespan, marketing, and waste disposal (Gecit, 2020, p.231). However, there is relatively little research on how PO is communicated to consumers. The existing studies generally focus on the campaigns themselves (Keeble, n.d.; Troeger & Hübner, 2017) or on consumer responses to these campaigns (Çerçi & Tosun, 2021; Cox et al., 2013; Echegaray, 2016) which tend to reflect negative attitudes towards PO practices (Akçay, 2022; Aydın Kanlıtepe & Özgül, 2021). As Cooper, (2005) suggests, the forms of technological and psychological obsolescence typically originate from either marketing or communication, making this an ideal starting point for exploring the topic (p.427).

Sustainability Communication

Sustainability was first defined in the 1987 report "Our Common Future" as the use of today's resources without compromising the needs of future generations (Brundtland, 1987). When examining the definitions of sustainability, it can be observed that the definition encompasses social, economic, and environmental aspects, with most studies addressing sustainability within these three dimensions (Bansal, 2005; Bergman et al., 2018; Goodland, 1995; McKenzie, 2004; Montiel & Delgado-Ceballos, 2014; Morelli, 2011). In the social context, sustainability addresses issues such as equity, adequate

nutrition, health, education, ecological footprint and the elimination of urbanization problems. In the environmental context, it involves climate change, problems related to natural habitats, loss of biodiversity, waste management issues, and the use of natural resources. Economically, it pertains to the improvement of living standards, economic development, and growth (Goodland, 1995).

In this context, institutions also undertake various corporate sustainability communication efforts. Although there is no precise date for the inception of corporate sustainability communication, it is suggested that the environmental crisis communications initiated by institutions in response to environmental scandals of the 1970s laid its foundation (Signitzer & Prexl, 2007, p.5). During the 1950s to the 1970s, the physical environment was largely considered irrelevant in marketing, except in industries such as oil, chemicals, and automobiles, where environmental concerns were framed as operational management issues. In the 1980s, with the publication of the Brundtland Report, it was recognised that environmental and sustainability issues had a significant impact on marketing (Peattie, 2016, p.240).

McDonagh, (1998) argue that a conventional communication or marketing approach should not be regarded as sustainable communication. According to McDonagh, (1998) “sustainable communication is an interactive social process aimed at resolving and eliminating ecological alienation between an organization and its public or stakeholders” (p. 599). Based on this definition, it can easily be claimed that sustainable communication, which centers on mutual understanding and a solution-oriented approach, is an important tool for organizations to convey their message to their target audiences. For organizations, maintaining corporate sustainability communications is crucial for achieving their goals. The concept of sustainable communication emphasizes a continuous process that supports the objectives of different stakeholders and, ultimately, the sustainability goals (Petts, 2000, p.247). It is an ongoing, clear, interactive, and coherent process with measurable results, utilized by organizations aiming to build lasting relationships with their stakeholders (Harrison et al., 2003). Sustainable communication is transparent, open, and dialogue-based. It informs society about issues such as process management systems, pollution control systems, risk assessments, life cycle assessments, environmental impact assessments, and product and technology development, all related to the assumptions of the industry in which the organization operates (Petts, 2000, p.242).

Within the scope of sustainability communication, organizations can undertake various communication activities related to their products. Examples include life-span labels, environmental claims, guarantees and warranties, quality marks, and labels concerning installation and care (Cooper & Christer, 2016). Additionally, the replacement period for products purchased to maintain status is shorter. One of the best practices in this area is to create a bond between existing products and consumers through various communication efforts (Cox et al., 2013). This ensures that products can be repaired when they break down. However, one of the biggest challenges in sustainability is the repair process when products fail. In this context, repair cafes staffed by individuals knowledgeable about repairs are one of the developments supporting sustainability. These centers, which cater to a range of products from electronic devices to bicycles, clothing, and household items, play a significant role in fostering a repair and reuse culture; (Masclat et al., 2023; Moalem & Mosgaard, 2021; Ozanne, 2024). Even phone companies are attempting to open their own repair centers to prevent purchase rates and support sustainability. Notably, Apple,

one of the companies most resistant to this movement, announced a repair program in 2021, and similarly, Microsoft has accepted the repair of its products (Sustainable Brands, 2024). According to Cooper (2005), increasing repair needs can be considered within the scope of social sustainability, potentially having a positive impact on employment.

In sustainability communication, the credibility of messages related to social, environmental, and ethical issues communicated by organizations is sometimes questioned by various stakeholders. The perception that an organization's sustainability communication is aimed at gaining a market advantage is not well received by stakeholders (Dawkins, 2004, p.10). Similarly, communication efforts based on PO can create social inequality while encouraging consumers to purchase new products (Satyro et al., 2018, p.749). Promotional activities, especially advertising and offers like 'buy-one-get-one-free,' are often criticized for driving unsustainable consumption levels (Peattie, 2016, p.248). It is evident that PO compromises the concept of sustainability. Governments, firms, and consumers all share responsibility. In 2015, France became one of the first countries to ban planned obsolescence, imposing penalties of up to two years in prison and fines of €300,000 (Wieser, 2016, p.156). The government has the power to legislate, firms should adhere to their sustainability activities, and consumers should be conscious of sustainable consumption as well, (AKanlitepe & Özgül, 2021, p.966). On March 30, 2022, the European Parliament published the Unfair Commercial Practices Directive (UCPD) and the Consumer Rights Directive (CRD) to empower consumers for green consumption. It was stated that "Consumers would have to be informed which products are more durable and repairable. Environmental and social impact, durability, and repairability would be added to the list of product characteristics about which traders are forbidden to mislead consumers." This indicates a step forward in avoiding PO activities. Additional measures have been included, such as limiting product durability (European Union, 2024; Sapmaz Veral, 2023).

Consumers are unaware of the effects of PO, or they are feeling hopeless about this issue (Akçay, 2022). Thus, communication plays a crucial role in encouraging responsible use, maintenance, and recycling of products, which is essential for changing consumer perceptions and behavior (Peattie, 2016, p.248). Therefore, organizations should integrate sustainability into all aspects of the company. When sustainability is included in the company's mission and vision but not reflected operationally, PO business models may be observed (Rivera & Lallmahomed, 2016, p.124). Based on this premise, the next section will examine the PO and sustainability communication efforts carried out by organizations. The following research questions will be addressed within this scope.

Research Question 1: What do the interviewees/participants reveal about their sustainable behaviors as consumers in Turkey?

Research Question 2: To what extent are consumers in Turkey aware of corporate sustainability communication strategies, and how do they perceive and evaluate these strategies?

Research Question 3: How aware are consumers in Turkey of corporate communication strategies related to PO, and what are their perceptions of these strategies?

Research Question 4: How do consumers in Turkey assess companies' PO practices in terms of sustainability?

Method

To examine the impact of PO and sustainability communication strategies on consumers within the context of corporate communication, an in-depth interview method, a qualitative research technique, was employed. In-depth interviews not only provide detailed information on a subject but also allow for the collection and analysis of participant-specific expressions (Dömbekçi & Erişen, 2022).

The population of the study consists of individuals in Turkey who prioritize sustainable consumption. Due to the impracticality of reaching the entire population, criterion sampling, a type of non-probability sampling, was used to determine the sample. The aim of criterion sampling is to select individuals who meet a predetermined set of criteria (Yıldırım & Şimşek, 2021, p.271). Within this scope, individuals who are aware of sustainability and are referred to as “green consumers,” “environmentally friendly consumers,” or “responsible consumers” were chosen as the sample to establish the relationship between sustainability communication efforts and PO strategies. Sustainable consumption is defined as “the use of services and related products that respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the lifecycle of the service or product so as not to jeopardize the needs of future generations” (UNEP, 2010). Within the study, selecting individuals with high awareness on the subject as the sample was based on the assumption that these consumers’ attitudes and behaviors would differ, and their awareness of communication strategies implemented by organizations in this direction would also be high.

The limitations of the study include focusing solely on consumers with a sustainability awareness and the subjective interpretations obtained through the use of in-depth interview methodology, a qualitative research method. In this study, the criterion for sample selection was based on individuals who responded above average (higher than 3 on a Likert scale) to the statements in the “green purchase behavior” survey developed by (Lee, 2009). Thus, a total of 14 individuals were surveyed, and 11 individuals who scored above the “green purchase behavior” average were included in the study and subjected to in-depth interviews.

For data collection, a semi-structured interview technique was employed. Interviews were conducted between 17.09.2024 and 01.10.2024. During the interviews, participants’ consent was obtained for recording, and these recordings were securely stored. Given that PO and sustainability are abstract concepts, the study divided these into two subcategories to facilitate easier examples from the consumers. Accordingly, the first group of 7 participants was asked to respond to the questions considering the “ready-to-wear” sector, while the remaining 4 participants were asked to consider the “technology” sector. This distinction is significant as it provides a comparative analysis of consumer perceptions of communication efforts in different sectors. Detailed information about the participants is provided below.

Table 1. Participant Information

Participants	Occupation/ Sector	Gender	S1	S2	S3	S4	S5	S6	S7	AVG
P1	Engineer	Female	3	3	2	2	4	2	3	2,71
P2	Engineer	Female	2	2	2	4	4	3	2	2,71

Participants	Occupation/ Sector	Gender	S1	S2	S3	S4	S5	S6	S7	AVG
P3	Communication	Female	2	3	2	4	4	3	2	2,86
P4	Communication	Female	2	2	3	2	3	2	2	2,28
P5	Engineer	Male	2	1	1	2	2	2	3	1,86
P6	Communication	Female	2	1	1	2	2	2	2	1,71
P7	Engineer	Female	3	2	1	4	2	1	2	2,14
P8	Communication	Female	2	3	2	4	4	2	2	2,71
P9	Dentist	Female	2	3	3	2	4	2	3	2,71
P10	Pharmacist	Female	2	2	1	2	2	3	3	2,14
P11	Communication	Male	4	3	1	3	3	2	4	2,86

- S1: "I usually buy organic products."
- S2: "I often buy products labeled as environmentally friendly."
- S3: "I often buy products that are against animal testing."
- S4: "I usually buy products that contain no or fewer chemicals."
- S5: "When I consider purchasing a product, I look for a certified eco-friendly or organic stamp."
- S6: "I often purchase products that support fair community trade."
- S7: "I often purchase products that use recycled/recyclable packaging." (Lee, 2009)

As part of the study, internal validity, internal reliability, external validity, and external reliability tests were conducted. To ensure the external validity of the study, purposive sampling was used (Başkale, 2016, p.24). For internal validity, participants were asked if the study findings accurately reflected their thoughts, employing the member checking method. Regarding reliability tests, external reliability was ensured by detailing the characteristics of the participants who were the data sources, and internal reliability was addressed through a descriptive approach to the data collected within the study (Yıldırım & Şimşek, 2021).

Ethics Committee Permission

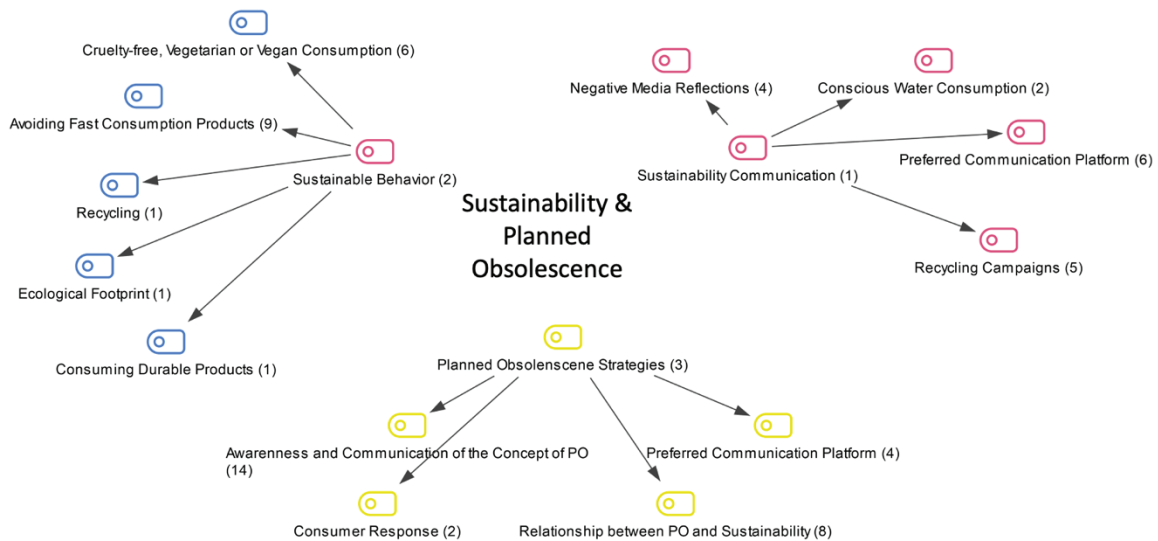
Within the framework of the decision taken during the meeting by Yeditepe University Humanities and Social Sciences Scientific Research and Publication Ethics Committee dated 16.09.2024 and numbered 54/2024; the study does not contain any ethical issues.

Findings & Data Analysis

Both content analysis, which sustains objective and systematic data analysis objective, and descriptive analysis, which gives details on the data methods, used to analyze the data within the scope of the research. Theme-code matching was performed for content analysis within the study. While themes were considered within the context of the research, the results of the study were used to derive themes and codes, utilizing the open coding method. The open coding method divided the research data into themes and categories (Neuman, 2020).

MAXQDA was used for data analysis within the study. Below is the model of the study.

Figure 1. Code Model



Theme 1: Sustainable Behavior

As all participants were given a pre-test, they are all aware of sustainability. However, to better analyze the participants and measure their awareness regarding communication campaigns, questions about daily life and consumption behaviors within the scope of sustainability were asked, resulting in the following codes. Additionally, two participants expressed that striving to exhibit sustainable behavior in Turkey causes them anxiety.

Participant 5: "In a city like Bursa, it is very difficult to hold this ideology. You have to explain it to everyone." Participant 10: "I started living more sustainably in small ways because we can't change our life habits immediately, nor our purchasing decisions. Paying too much attention to this also started to cause me anxiety."

Cruelty-free, Vegetarian or Vegan consumption

Most participants indicated that they are cautious about living sustainably by adopting a vegetarian lifestyle. Additionally, many participants stated that to support sustainable living, they do not purchase products from brands that conduct animal testing and do not use leather products. Participant 2 stated, "Sustainability is something I have recently adapted to. I pay attention to the clothes I buy. I am vegetarian and prefer products that are not tested on animals. I also try to be mindful of my clothing choices. Additionally, I do not use plastic bags."

Avoiding Fast Consumption Products

Many participants defined their sustainable behavior as not consuming unnecessary goods and avoiding fast consumption products. Participant 1 commented on consumption habits, stating, "For me, sustainability is about maintaining balance. If I buy clothes one week, I try not to consume meat that week or buy fast technology products. Instead of buying headphones from China, I prefer to purchase higher quality and long-lasting products." In this context, consumers try to avoid fast fashion or fast technology products.

Consumers do not consider brands like Apple and Samsung as fast-technology products.

Besides avoiding fast consumption products, participants also support local businesses and try to use second-hand items. However, comments from two different participants noted that brands with a local and sustainable identity are more costly. Therefore, it was mentioned that not everyone can afford to make such choices due to the inaccessibility of these brands.

Recycling

Participants stated that they value recycling in their daily lives and want to see the results of their efforts. Participant 6 expressed this by saying, "I value recycling. I do it myself at home, but, for example, I cannot throw my old clothes into municipal bins because I don't know what will happen to them," indicating their desire to see the outcomes of recycling.

Ecological Footprint

Reducing the ecological footprint along with fast consumption products was also considered a sustainable behavior. In addition to the term "ecological footprint," Participant 2 tried to describe circularity as "trying to keep up with the environment."

Consuming Durable Products

The findings from the research also indicated that sustainable consumption is perceived as consuming more durable products. Participant 3 identified sustainability with durability by saying, "I don't think about sustainability when buying something. Actually, I don't think about sustainability and purchasing as two concepts. For me, it's about how long something lasts when I buy it."

Theme 2: Sustainability Communication

Many sustainability communication efforts have been carried out by institutions in Turkey in the fields of technology and ready-to-wear (Halaçeli Metlioğlu & Yakın, 2021; Koyuncu et al., 2023; Yücel & Tiber, 2018). However, participants in the study believe that institutions are insufficient in their sustainability communication. They indicate that institutions not only fail in their sustainability communication efforts but also perform sustainability initiatives solely to avoid penalties. Additionally, participants feel that the sustainability efforts by institutions are inadequate. In this context, Participant 7 states, "In fast consumption products, I see more trend-related efforts than those related to sustainability," expressing that such efforts are not being made. Participant 10 emphasizes the importance of brand ideology in sustainability communication by saying, "It is important for the brand's ideology to be sustainable." Similarly, Participant 7 highlights the significance of brand positioning by stating, "Local brands are working on their content. Not every local brand is sustainable, but there are brands that focus on this topic and frequently carry out communication efforts to distinguish themselves and their products from other brands." Consequently, many participants struggled to identify the communication efforts made by institutions. Below are the codes prepared in this context.

Preferred Communication Platform

Participants noted that the efforts made by institutions in the scope of sustainability are not frequent and mentioned that digital platforms, influencer communication, and billboards in stores are primarily chosen for sustainability communication. Participant 2 expresses the inadequacy of communication efforts by institutions in the technology

sector with the following statement: "I think sustainability efforts are made for a specific audience; they become apparent when someone interested looks for them, but they do not reach everyone." Explaining why TV is not used in sustainability communication, Participant 6 states, "Because the X generation is on TV, and they focus more on factors like affordable prices or good customer service, while the Y generation and other younger generations care more about sustainability and usually use social media," explaining why these platforms are chosen as communication channels.

Negative Media Reflections

Some participants noted that instead of the sustainability communication efforts by institutions in the technology or ready-to-wear sectors, they pay more attention to negative media coverage about sustainability. Participant 3 mentioned, "In the US, an oil company developed a communication strategy about personal recycling, but they focused so much on this topic that they tried to show that only individuals are responsible for sustainability, and in this context, the US government sued the company." Similarly, Participant 8 said, "I read news about harsh working conditions in third-world countries. But I do not see any efforts by ready-to-wear brands on this issue," indicating that institutions are not working on this topic and that negative news is more prevalent in the media.

Conscious Water Consumption

According to the findings of the research, participants do not find the efforts by institutions on water consumption to be sincere. Participant 11 expressed concerns by saying, "They communicate about reducing water consumption, but none of it seems convincing to me. I wonder if they separate factory waste," expressing their doubts on the subject.

Participant 9 expressed their lack of knowledge by saying, "I didn't know that so much water is used in clothing production."

Recycling Campaigns

Participants mentioned that although not frequent, institutions in the technology and ready-to-wear sectors develop communication strategies about recycling, but they do not find most of these efforts sincere.

Participant 9 expressed that the communication strategies did not affect them by saying, "Some brands have clothes made from recycled products. But they seem low-quality to me. I wouldn't pay more for these products."

Participant 10 expressed their disappointment by saying, "Brands communicate that they have sustainable products and use recycled fabric, but when I find out it's not true, it was just a communication strategy, it's a huge disappointment. Additionally, some brands conduct sustainability efforts, but I see that they pay low wages to their workers or use child labor, and then I wonder why they would care about the world's sustainability."

In this context, Participant 3 stated, "Apple says all its products are recyclable. This positively affects me, but it's not a significant factor that changes my purchasing decision," indicating that they are aware of sustainability communications, but such campaigns do not influence their purchasing decisions.

Theme 3: PO Strategies

In this study, participants' awareness of PO strategies, communication efforts related to

this concept, consumer responses, the platforms where these communication efforts are conducted, and their relationship with sustainability are presented below as sub-codes.

Awareness of the concept of PO, except for three participants, the others were not familiar with the concept of planned obsolescence. One participant mentioned that this concept could be limited solely to technology products. Those who were aware of the concept generally associated it with the Apple brand. Additionally, Participant 11 stated, "I am aware of the concept, but I don't think deliberate obsolescence is practiced today. The use of cheap raw materials to reduce costs decreases the lifespan of products," emphasizing that only functional PO is practiced today. Other participants expressed that PO strategies are primarily carried out on a psychological level through various communication channels.

When the definition of the PO strategy was provided, and participants were asked about the communication strategies of institutions on this topic, Participant 2 stated, "I think they use advertisements that affect our emotional side," while Participant 10 said, "Their communication efforts seem to create a push that influences our consumption, making us want to consume more. For example, in ready-to-wear products, there is no understanding of 'let's buy less and wear it forever'; instead, there are efforts that constantly make us want more, and sometimes I am influenced by these communication efforts," indicating that emotional communication efforts affect them.

Participants indicated that PO strategies are not applied by every brand in the technology field. Participant 1 stated, "Apple does this, but looking at Dyson, they produce very long-lasting products and emphasize this in their communication efforts. Therefore, not every brand follows this practice," highlighting that brands have different strategies.

Consumer Response

Although consumers expressed their opposition to planned obsolescence, they also indicated that they would not stop purchasing from brands that develop PO strategies and conduct communication efforts on this topic. Participant 1 shared their thoughts, stating, "PO is a norm from the past; it should not be taken very seriously. For instance, even if Apple uses this strategy, I would not stop using it because I like the brand." Additionally, participants also expressed a reaction to the communication efforts made, stating that it is not right to play with consumers' emotions.

Preferred Communication Platform

Participants indicated that PO strategies are often implemented through influencer communication on social media. Participant 6 expressed their thoughts, stating, "No matter how much we strive to be sustainable and conscious consumers, they constantly drive us to consume through campaigns. Especially on social media platforms like Instagram and TikTok, trends and fashions emerge. There are always new brands and rapid communication; constantly changing trends force us to consume, and sometimes we fall for it." Similarly, Participant 7 stated, "Previously, the concept of fashion was still based on trends, but the duration was longer. Now, trends emerge every three months or sometimes even every two weeks, and a lot of work is done on this. So, micro-trends are now being created through social media."

Relationship Between PO and Sustainability

Three participants indicated that institutions implementing PO strategies contribute

to economic sustainability, while two stated that they only contribute to the economy of these institutions. Participant 2 commented, "I think PO strategies positively affect economic sustainability, negatively impact environmental sustainability, and have no effect on social sustainability."

Most participants stated that PO has no relationship with sustainability. Participant 11 expressed their view, stating, "These efforts create a positive impact within the institution and contribute to the economy."

Participant 1 emphasized that the economic, social, and environmental aspects of sustainability should be considered as a whole by stating, "Now, think of the ecosystem as a balloon; if you squeeze one side, the other side will burst. Therefore, where there is no environmental sustainability, social and economic sustainability is also impossible."

Conclusion and Evaluation

The Great Depression of 1929 inflicted deep wounds on the world economy, and during this period, PO strategies emerged as solutions to reduce the increasing stock levels. Today, this strategy presents a contradictory structure, especially in the context of the sustainability concept, which has come to the fore more frequently due to the increasing effects of the environmental crisis such as the climate crisis. Companies reduce the lifespan of their existing products to make more sales and increase profit margins, encouraging consumers to buy more. Additionally, within the framework of sustainability, they organize recycling, waste management, and social aid campaigns. However, while these companies increase their sales through communication campaigns that promote consumption and pollute the environment during production processes, causing raw material shortages, their claims of protecting nature and adopting a human-oriented approach highlight the contradictions in this area.

This study aims to reach consumers with knowledge about sustainability rather than addressing all consumers. By doing so, it aims to examine the communication efforts related to this concept in a more detailed context and has conducted in-depth interviews with participants. Based on the findings obtained from the research, three main themes were identified to answer the research questions, and codes were created within these themes.

The first research question is, "What are the sustainable behaviors of consumers in Turkey?" In this context, the theme of sustainable behavior was created, and the behaviors of participants related to sustainable consumption in their daily lives were analyzed. Based on the responses, it was determined that participants who prioritize sustainable living in Turkey engage in five different consumption and living behaviors. Nine participants stated that they do not prefer fast-consumption products. They mentioned that they do not purchase products from brands known as fast technology or fast fashion; however, they include low-quality products from China in this category while excluding brands like Apple. Additionally, the majority of participants stated that they do not consume animal products. Similarly, they mentioned that they do not wear products made from animal materials like leather and do not use brands that conduct animal testing. Consumers who prioritize sustainable living also emphasized the importance of recycling, ecological footprint, and striving to consume durable products. Therefore, in response to the first question, it can be said that consumers who exhibit sustainable behavior avoid fast consumption products, do not consume animal products, prioritize

recycling and low ecological footprint, and prefer durable products.

The second research question of the study is, “What is the awareness of consumers in Turkey regarding the sustainability communication strategies implemented by companies, and how do they evaluate these strategies?” When examining the research results, it was observed that despite the high practical application of these concepts in their daily lives, consumers’ knowledge levels regarding companies’ communication efforts on this topic were low. Although participants mentioned that platforms like social media are used more frequently, they expressed that companies generally conduct communication efforts related to recycling or water consumption and that these efforts do not seem convincing to them. Additionally, participants stated that they more frequently encounter negative news criticizing the sustainability efforts of companies through the media. In this context, in response to the second question, it can be said that consumers who exhibit sustainable behavior in Turkey find the sustainability communication efforts inadequate and unconvincing.

The third research question is, “What is the awareness of consumers in Turkey regarding the communication strategies implemented by companies within the context of PO strategies, and how do they evaluate this communication?” Participants suggested that companies frequently engage in psychological obsolescence. In this context, it was mentioned that social media, especially influencer communication, is used frequently. Participants emphasized that communication periods have shortened and that the frequency of consumption-oriented communication for new products has increased.

Finally, the fourth and last research question of the study is, “How do consumers in Turkey evaluate the PO efforts of companies in terms of sustainability?” Some participants stated that sustainability efforts contribute to economic sustainability, have no impact on social sustainability, and harm environmental sustainability. Despite many studies in academic literature that consider sustainability only from an environmental perspective, the concept of sustainability should be considered as a whole under three structures. In this context, only one participant stated that PO strategies are not sustainable in any way.

The findings suggest that companies undertake sustainability efforts because it is a popular topic, and this situation is noticed by those who prioritize sustainable living and meet with a negative attitude. As long as companies continue to actively develop (PO) strategies and accelerate the launch of new products, convincing consumers about sustainability will remain a challenge. Additionally, as discussed in the literature review, consumers define sustainability as an important concept but struggle to integrate it into their consumption habits. Those who are more conscious of sustainability tend to be more attentive to these issues and prefer sustainable products. However, the communication efforts carried out by companies are often unrecognized, even by consumers with awareness in this area, leading to wasted time and resources. It will not be sufficient for companies to conduct only communication efforts. The sustainability concept that can reflect on their brand ideologies and the efforts made in this regard will be more perceived and positively evaluated by consumers. This study provides a snapshot of consumers’ perceptions of companies’ activities related to these two concepts and aims to guide future campaign-based performance research and new studies in this area.

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Planned Obsolescence And Sustainability in the Context Of Corporate Communication Strategies: A Qualitative Study on Consumers

Ege Simge DEMİREL (Asst. Prof Dr.)

Extended Abstract

The various corporate communication strategies employed by organizations to manage their relationships with stakeholders and influence their behaviors contribute significantly to the establishment of a positive image and reputation. In this context, organizations gain both reputation and legitimacy in areas such as environmental protection, social development, and economic growth through their communication efforts related to sustainability. These efforts are crucial as they help build a brand image that resonates with consumers' growing concerns about environmental and social issues. However, the planned obsolescence strategies adopted in their brand communications create a contradiction, particularly in the context of environmental sustainability, where the very practices aimed at maintaining market demand and economic viability clash with sustainable development goals.

The concept of planned obsolescence emerged during the 1929 Great Depression as a means to stimulate economic recovery. This strategy involves pre-determining a product's lifespan before it is introduced to the market, essentially involving the strategic forecasting of the product life cycle. By shortening the lifespan of products, manufacturers can sustain consumer demand and increase sales, ensuring a continuous market for new products. This approach was initially intended to boost economic activity by encouraging consumers to purchase more frequently, thus driving production and employment. However, in contemporary discourse, sustainability is defined by the principle of meeting today's needs without compromising the ability of future generations to meet their own, presenting a framework that conflicts with planned obsolescence. The conflict arises because planned obsolescence promotes increased consumption and waste, which are antithetical to the principles of sustainability that advocate for reduced consumption, waste minimization, and long-term environmental stewardship.

In the context of economic and social sustainability, planned obsolescence can contribute to employment growth and economic stability, contingent upon the continuity of production processes. Increased production leads to more jobs and economic activity, which are vital components of social sustainability. However, from the perspective of environmental sustainability, planned obsolescence leads to several adverse outcomes. The strategy results in increased water consumption during production and supply processes, heightened waste generation, the depletion of natural resources, and the exacerbation of the climate crisis. The environmental cost of continually producing and disposing of short-lived products undermines efforts to achieve sustainable development goals, which aim to balance economic growth with environmental preservation and social well-being. Consequently, a conflicting relationship emerges between planned obsolescence strategies and environmental sustainability goals, highlighting the need for a reassessment of how products are designed, produced, and marketed.

Companies often create a perception among consumers to renew or replace their

existing products through corporate communication strategies that support planned obsolescence. Simultaneously, they strive to convey an image of greater environmental sensitivity through sustainability communications. This dual messaging can confuse consumers, who may find it challenging to reconcile a company's environmental claims with its encouragement of frequent product replacement. Thus, the communication efforts impact the attitudes and behaviors of their target audiences, fostering a positive perception of the organization's sustainability endeavors while promoting consumption patterns that contradict sustainability principles. This dichotomy presents a significant challenge for companies attempting to navigate the complex landscape of modern consumer expectations and environmental responsibilities.

This research aims to evaluate the perceptions and attitudes that companies' planned obsolescence strategies and sustainability communications create among consumers. To examine the effects of these strategies on individuals within the context of corporate communication, a qualitative research method employing in-depth interview techniques has been utilized. This approach allows for a deeper understanding of consumer attitudes and behaviors, providing insights that quantitative methods may not capture. In this regard, the study focuses on consumers' awareness levels, emotional responses, and behaviors concerning planned obsolescence strategies and sustainability.

The population of the study consists of individuals in Turkey who possess an awareness of sustainable consumption. In selecting the sample, a form of purposive sampling known as criterion sampling was employed, ensuring that participants met specific criteria relevant to the research objectives. In-depth interviews were conducted with 12 consumers who are aware of sustainable consumption. The questions posed to participants aimed to elucidate their perceptions, attitudes, and behaviors regarding sustainability and planned obsolescence. This method enabled the researchers to gather detailed and nuanced data, providing a comprehensive view of consumer perspectives on these issues.

This study analyzes the relationship between sustainability communication and planned obsolescence strategies, assessing how companies convey messages to consumers through these approaches. The sample consisted of consumers with an awareness of sustainability, whose sustainable behaviors, knowledge of planned obsolescence strategies, and evaluations of sustainability communication were examined. Utilizing in-depth interviews as a qualitative research method, the study generated codes under the themes of sustainable behavior, planned obsolescence strategies, and sustainability communication. These codes help organize the data and identify key patterns and themes that emerge from the interviews.

For sustainable behavior, the identified codes included cruelty-free or vegan consumption, avoidance of fast consumption products, recycling practices, ecological footprint awareness, and the consumption of durable products. These behaviors reflect a commitment to reducing environmental impact and promoting ethical consumption. Under the theme of sustainability communication, the codes encompassed negative media reflections, conscious water consumption, preferred communication platforms, and recycling campaigns. These elements highlight the various ways companies communicate their sustainability efforts and the channels they use to reach consumers. For planned obsolescence strategies, codes were developed regarding awareness and communication of the concept of planned obsolescence, preferred communication platforms, consumer responses, and the relationship between planned obsolescence and sustainability. These

codes illustrate how companies' planned obsolescence strategies are perceived and the impact of these strategies on consumer attitudes and behaviors.

Ultimately, the findings indicate that while consumers may exhibit sustainable behaviors, they often do not perceive the sustainability efforts of organizations as genuine. This perception gap suggests that companies need to align their sustainability communications more closely with their actual practices to build trust and credibility with consumers. Consequently, based on the research findings, this study offers a critical perspective on the contradictions between corporate communication strategies related to sustainability discourse and planned obsolescence strategies. It underscores the importance of transparency and consistency in corporate communications to foster genuine engagement with sustainability issues among consumers. By addressing these contradictions, companies can enhance their reputation and legitimacy in the eyes of increasingly discerning and environmentally conscious consumers.

Keywords: Corporate Communication, Planned Obsolescence Strategies, Sustainability Communication.

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Etik Kurul İzni | Ethics Committee Permission

Within the framework of the decision taken during the meeting by Yeditepe University Humanities and Social Sciences Scientific Research and Publication Ethics Committee dated 16.09.2024 and numbered 54/2024; the study does not contain any ethical issues.

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Research Article | Araştırma Makalesi

Climate Change and Media: An Analysis of Public Service Announcements and Communication

Public Service Announcements of the Ministry of Environment, Urbanisation and Climate Change

İklim Değişikliği ve Medya: T.C. Çevre, Şehircilik ve İklim Değişikliği Bakanlığının Duyurum ve İletişim Amaçlı Kamu Spotu Çalışmalarına Yönelik Bir Analiz



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Abstract

Climate change may adversely affect economic activities in the country, region or city centre. In this framework, administrative studies are carried out worldwide to eliminate or reduce the negative effects of climate change. In Turkey, the Ministry of Environment, Urbanisation and Climate Change is the highest level institution working on this issue. This study focuses on the public service announcement and communication public service announcements on climate change by the Ministry of Environment, Urbanisation and Climate Change. The contents of the public service announcement and communication public service announcements on climate change shared by the Ministry on its official social media account constitute the data of the study obtained through document analysis. In this context, critical case sampling is applied in the study and the official social media account of the Ministry is analysed within this framework. The data analysis method of the study is content analysis used in qualitative research perspective. By adhering to the steps of the content analysis method, it is tried to determine which themes, categories and codes are prominent in the public service ads on climate change shared by the Ministry from its official social media account. As a result of the analysis, it was seen that different themes, messages and strategies were applied in each public service announcement on climate change. Climate change awareness, call to action, sustainability and nature protection, social unity and politics were identified as themes; interaction and awareness, critical warnings, targets and projects, emotional bonding were identified as categories; and concepts such as zero waste, green transformation, social solidarity were identified as codes.

Keywords: Climate Change, Ministry, Public Service Announcement, Communication, Content Analysis.

Öz

İklim değişikliği; ülkedeki, bölgedeki ya da şehir merkezinde ekonomik aktiviteleri olumsuz yönde etkileyebilmektedir. Bu çerçevede dünya genelinde iklim değişikliğiyle ilgili olumsuzlukları gidermek ya da azaltmak için yönetimsel anlamda çalışmalar yapılmaktadır. Türkiye’de bu konuda çalışma yürüten en üst düzeydeki kurum T.C. Çevre, Şehircilik ve İklim Değişikliği Bakanlığı’dır. Bu çalışma T.C. Çevre, Şehircilik ve İklim Değişikliği Bakanlığının iklim değişikliği konusundaki duyurum ve iletişim amaçlı yayınladığı kamu spotu çalışmalarına odaklanmaktadır. Bakanlığın resmi sosyal medya hesabından iklim değişikliği konusunda duyurum ve iletişim amaçlı paylaştığı kamu spotu içerikleri çalışmanın döküman incelemesi yoluyla elde edilen verilerini oluşturmaktadır. Bu kapsamda çalışmada kritik durum örneklemesi uygulanmakta ve Bakanlığın resmi sosyal medya hesabı bu çerçevede incelenmektedir. Çalışmanın veri analiz yöntemi nitel araştırma perspektifinde yararlanılan içerik analizidir. İçerik analizi yöntemi adımlarına bağlı kalınarak Bakanlığın resmi sosyal medya hesabından paylaştığı iklim değişikliğine ilişkin kamu spotlarında hangi tema, kategori ve kodların ön plana çıktığı belirlenmeye çalışılmaktadır. Yapılan incelemeler sonucunda her bir kamu spotunda iklim değişikliği konusunda farklı tema, mesaj ve strateji uygulanmaktadır. İklim değişikliği bilinci, eylem çağrısı, sürdürülebilirlik ve doğa koruma, toplumsal birlik ve politika tema; etkileşim ve farkındalık, kritik uyarılar, hedefler ve projeler, duygusal bağ kurma kategori; sıfır atık, yeşil dönüşüm, toplumsal dayanışma gibi kavramlar ise kod olarak belirlenmiştir.

Anahtar Kelimeler: İklim Değişikliği, Bakanlık, Kamu Spotu, İletişim, İçerik Analizi.



Introduction

Climate change is considered as a problem that threatens the environmental, social and economic balance worldwide. Turkey is also facing the effects of this global problem. Climate change in the country creates negative impacts in critical areas such as agriculture, water resources and energy, and this situation threatens the general welfare of the society. In this context, informing the public on this issue and raising awareness is of great importance.

In the literature, it is seen that various academic studies have been conducted on the Ministry of Environment, Urbanisation and Climate. Şengün (2015), In his study titled 'Environmental management in Turkey and the practices of the Ministry of Environment and Urbanisation', he examined the importance of the Ministry of Environment and Urbanisation in environmental management, environmental legislation and institutions responsible for environmental management. In another study, the benefits of unmanned aerial vehicles studies in terms of the Ministry of Environment and Urbanisation were discussed (Ekinci et al., 2017). Candan and İnce, (2014), examined the path from mobbing to burnout on the employees of the Ministry of Environment and Urbanisation, and examined the mobbing and burnout status of individuals working in the Ministry of Environment and Urbanisation and the relationship between these two situations. As a result of the research, it was determined that the employees were exposed to mobbing, albeit at a low level. It has been determined that mobbing to which employees are exposed differs according to gender and the units they work in. In addition, there are various academic studies on public service announcements. Aydın (2016), in his academic study titled 'A research on environment-themed public service announcements within the scope of environmental communication', analysed the environment-related public service announcements broadcast on TRT 1 between 2012 and 2015. Another research is on public service announcements broadcast by the Turkish Radio and Television Corporation in 2015 (Ünal and Tanca, 2016). Darı (2022) conducted a research on public service announcements about environmental pollution based on plastic waste during the Covid-19 pandemic period. In this study, written and visual indicators used in public service announcements about plastic waste-based environmental pollution were analysed using semiotics technique. In another study titled Health-safety states in audiovisual media: public service announcements as a field that needs to be discussed, content analysis of two campaigns prepared by the Ministry of Labour and Social Security and the Let's Stop Work Murders Civil Platform in the field of occupational health and safety was analysed (Aytekin, 2016).

The Ministry of Environment, Urbanisation and Climate Change of the Republic of Turkey aims to raise public awareness on climate change through communication and announcement activities through public service announcements. The main purpose of this study is to analyse the public service announcement activities of the Ministry of Environment, Urbanisation and Climate Change on climate change. In this direction, it is tried to determine which themes, categories and codes come to the fore by analysing the posts made on social media. The study aims to provide information about the communication strategies of the ministry and to evaluate the effectiveness of messages aiming to raise public awareness on climate change.

Raising awareness on climate change can directly affect society's approach to the issue and willingness to take action. Public service announcements conducted by the Ministry play a critical role in raising this awareness. The results of the study can contribute to the

determination of more effective communication strategies to be developed for informing the public on climate change. In addition, this study can provide suggestions for the development of communication strategies in Turkey by providing a comparison with similar practices in other countries.

This study focuses on public service announcements on climate change shared on the official social media accounts of the Ministry of Environment, Urbanisation and Climate Change of the Republic of Turkey. The research provides a thematic evaluation through content analysis method by analysing the contents published in a certain time period. The scope of the study consists of the content of public service announcements on climate change provided by the ministry on its official website.

The limitation of the study is considered as analysing the data obtained from the social media accounts of the Ministry of Environment, Urbanisation and Climate Change. Therefore, the effects of other public institutions on climate change communication are not addressed within the scope of the study. In addition, it is thought that quantitative data as well as qualitative data may be needed to measure the impact of public service announcements. In this context, the results of the study may contain a limited perspective due to the examination of public service announcements based on qualitative content analysis.

1. Conceptual Framework

1.1. Climate Change and Climate Communication

The world has experienced many climatic changes since its existence. As a result of this situation, fresh water, clean air, surface and underground riches, which are the source of life for people, have emerged.

Before the industrial revolution, the energy required was obtained by using natural resources (strong animals were used for people to travel and plough their lands, winds and people's rowing were used in ship voyages, plants were burned for heating) (Cole, 2020). With the transition of humanity to the industrial revolution, various developments have been experienced in the vital field. These developments, first in Europe and then all over the world, have been seen in areas such as the rapid provision of transport, access to different geographies, the transport of heavy loads, the widespread use of advanced and powerful tools in agricultural tools, the development of heat conservation of dwellings, and food production (Bradshaw, 2010). This situation has led to the use of excessive amounts of fossil fuels (such as natural gas, coal, petroleum) that cause excessive energy use. As a result of the excessive use of these fuels, carbon dioxide (CO₂) emissions have increased and climate changes have started to occur worldwide (UNEP, 2023). For example; 2021 was one of the seven hottest years on record. The temperature increased by 1 (°C) compared to the pre-industrial period. These developments reveal that climatic change will continue to be experienced due to the emission of greenhouse gases and its negative effects will be reflected in cities and social life (WMO, 2022).

Climate change is becoming an increasing threat worldwide and is shaping the international agenda with its environmental, social and economic dimensions. Climate change is positively linked to the increase in greenhouse gases emitted into the atmosphere as a consequence of human activities, which leads to global warming by destabilising the climate system (IPCC, 2021). In this context, climate change should be

considered not only as an environmental problem but also as a social challenge, as its impacts affect all segments of society (Nisbet, 2009).

According to Moser (2016), the exact nature of the crisis, which initially started to be experienced due to climate change, and how it occurred could not be understood. However, today, it has become very important to provide accurate and good communication in order to raise people's awareness about the climate crisis and to take necessary action. In this context, various methods, tools and processes have started to be established to improve communication for the climate crisis (Ballantyne, 2016). In addition, the level of knowledge, comprehension and action by scientists and the level of knowledge of the public about the climate crisis are very different from each other (Stammen & Meissner, 2024). According to Leon et al. (2023), communication on climate change is of great importance for groups with higher levels of awareness to be able to guide those with lower levels of knowledge in an accurate and effective manner. In this context, experts need to be able to mobilise the emotions of the public in order to engage them in the climate crisis and to create motivation for action.

Climate communication refers to communication activities carried out to increase knowledge and awareness on climate change. This concept aims to make individuals more aware of climate change and encourage them to take action on it (Whitmarsh & Corner, 2017). Climate communication is usually carried out through various media tools, public campaigns and social media platforms, using strategies based on emotional, logical and social norms (Moser & Dilling, 2011).

Ballew et al., (2019) state that effective climate communication plays an essential role in shaping the public's feelings and thoughts about climate change, providing information and raising awareness. Emotional appeals and logical arguments encourage greater public engagement and social mobilisation on the issue (Lee et al., 2024). Furthermore, messages of community bonding and partnership help individuals understand their role in the fight against climate change (Nisbet & Myers, 2007).

1.2. Public Service Announcements: Role as a Strategic Communication Tool in Combating Climate Change

With the developing world, various problems affect human life. Governments, states, societies or administrations that want to eliminate these problems should develop solutions to eliminate problems. At this point, one of the methods used to overcome social problems is public spots (Rice & Atkin, 2013). Public service announcements are media products containing short, effective and remarkable messages created to raise public awareness and contribute to the solution of social problems (Coleman & Hatley Major, 2014). Public service announcements are an important strategic communication tool used by governments, foundations, associations and official institutions to communicate effectively with the public (Harris & Krishnan, 2023). In tackling a complex and urgent problem such as climate change, the role of public service announcements is becoming more prominent. Such communication tools are designed to raise social awareness, raise awareness of individuals and encourage them to take action (Ittefaq, 2024; Looi et al., 2023). In addition, raising awareness by informing societies on issues such as environment, children, women, animals, health and education rights are among the purposes of public service announcements (Aytekin, 2016).

Announcements prepared for public and social problems by non-governmental organisations or governments that do not have any profit motive are referred to as public service announcements. It is aimed to direct the target audience with the content of public service announcements and to create a change in their behaviour (Nan, 2008). In addition, public service announcements are created to raise awareness of societies against bad and negative events that may occur about all social issues affecting societies, especially health. In addition, it is aimed to change the attitudes and behaviours of the target audience, to aim to gain awareness and habits and to take precautions against problems through public service announcements (Chang, 2024). In this context, public service announcements on climate change are also being developed and certain strategies are being developed for these announcements to be effective. Rhetorical techniques such as emotional appeal, logical arguments and emphasising social norms increase the impact of public service ads on the audience (Alim & Rahim, 2021). For example, with emotional appeal, the potential effects of climate change on individuals are made more tangible by appealing to the emotional world of the audience (Mo & Zhou, 2024).

Public service announcements are recognised as a powerful tool to ensure social change. They contain encouraging messages for the society to take an active role in combating climate change and aim to increase the participation of individuals (O'Neill & Nicholson-Cole, 2009). In particular, calls to act together and themes of social solidarity draw individuals into a collective endeavour (Dahlstrom, 2014). In this context, public service announcements draw attention to social problems and ensure that the society acts in the desired way (Uluğ-Yurttaş, 2021). Furthermore, the information and awareness-raising provided through public service announcements allows for a deeper understanding of climate change in society. Such campaigns are usually prepared for specific target audiences and disseminated through various communication channels (Bennett & Segerberg, 2012). The use of social media platforms increases the impact of public service announcements and enables them to reach wider audiences (Tufekci, 2017).

Public service announcements play an important role as a strategic communication tool in combating climate change. They are effectively used to raise social awareness, encourage individuals to take action and provide support for climate policies. In this context, effective design and implementation of public service announcements are among the factors that directly affect the success in combating climate change.

2. Methodology

2.1. Subject and Purpose of the Study

The methodological design of the research is based on the content analysis technique, which is a thematic analysis approach within the qualitative research method. In this process, the public service announcements published by the Ministry of Environment, Urbanisation and Climate Change on the social media platform YouTube in a certain period are analysed according to the determined analysis criteria and themes, categories and codes are created. In this framework the subject of the research is the analysis of the public service announcements of the Republic of Turkey Ministry of Environment, Urbanisation and Climate Change on climate change. The aim of the research is to determine which themes, categories and codes are prominent in the public service announcements published on the official social media accounts of the ministry. In this direction, it is aimed to increase the effectiveness of communication strategies and public awareness on climate change.

2.2. Scope of the Study and Research Question

The research covers the public service announcements on climate change published on the social media accounts of the Ministry of Environment, Urbanisation and Climate Change of the Republic of Turkey and the discourses in the public service announcements. In this framework, the research questions sought to be answered in the research process were determined as follows:

- Which themes, categories and codes are prominent in the public service announcements shared by the Ministry?
- Which rhetorical codes and techniques are prominent in the discourses of public service announcements?
- Which messages and values are emphasised for people about climate change?
- How is the social awareness raised through public service announcements on climate change reinforced through social media interactions?
- Which emotional and cognitive responses are triggered by the language and visual elements used in the content of the Ministry's public service ads on climate change?

2.3. Research Analysis Method

In this study, content analysis method, which is widely used in qualitative research method, was preferred. Content analysis allows certain themes and patterns to emerge through the systematic examination of texts or visuals (Berelson, 1952; Krippendorff, 2019) Content analysis method consists of certain stages. These stages are listed as follows (Saldana, 2021; Elo & Kyngäs, 2008):

- **Data Collection and Coding:** It is the collection of the contents (texts, interviews, documents, etc.) to be analysed. This stage includes determining which type of data will be used and how they will be collected.
- **Theme Development:** It is the determination of main themes or sub-themes from the data obtained from the coding phase. This helps to reveal patterns and relationships in the content.
- **Data Analysis and Interpretation:** Analysing and interpreting the identified themes and categories and evaluating them in the context of the research questions.
- **Reporting the Results:** It is the presentation of the findings of the research in a clear, systematic way. At this stage, the research process, findings and interpretations are shared.

In this framework, the research is conducted with qualitative research method. Using the content analysis technique, 15 public service announcements on climate change published on YouTube, the official social media account of the Ministry, are analysed. Firstly, 15 public service announcements published by the Ministry were collected together with their visual and textual content. These data were obtained through the content shared on YouTube, the official social media account of the Ministry. At this stage, each public service announcement was coded according to a specific theme, category and rhetorical code. After the coding phase, similarities and differences between the data are identified and main themes are developed. These themes cover elements such as messages about climate change, visuals used, emotional tones of the texts and discourses aiming at social change. The data are analysed within the framework of determined themes and categories. The relationships between themes, which messages are supported by which strategies and how they can affect social awareness are analysed. At this stage, it is also

analysed how public service announcements are presented on social media platforms and their impact on the audience. Research findings are reported systematically in terms of themes, categories and rhetorical strategies. The findings are presented in a framework that reveals to what extent the Ministry's public service announcements serve the objectives of raising awareness on climate change.

Some applications were made for the validity of the analysis. Firstly, it was checked how appropriate the materials analysed through content analysis were with the research questions and themes determined. For example, it was ensured that the social media content selected for the public service announcements served the purpose of raising awareness on climate change. For this purpose, the Ministry's posts on the selected social media platform YouTube were limited to content related to climate change. During the coding process, each theme and category was associated with the research questions. The contents were categorised thematically in accordance with the purpose of the research. In order to ensure the accuracy of the themes in the reliability of the content analysis stages, three analysts coded and 91% of the themes, categories and codes were agreed upon and the analyses were classified accordingly.

2.4. Sample of the Study

In this study, critical situation sampling is utilised. According to Patton (2015) critical situation sampling is expressed as 'if it happens there, it can happen anywhere, or if it does not happen there, it does not happen anywhere'. Critical case sampling also enables in-depth examination of a particular concept, event or situation (Yin, 2017). In this framework, the sample of the study is the public service announcements on climate change published on the official social media accounts of the Ministry of Environment, Urbanisation and Climate Change of the Republic of Turkey. The highest level activities of the Ministry in this field are especially the announcements that aim to inform the public. In this context, the data obtained from the studies conducted on a universal problem such as climate change with the critical case sampling method is the sample of this study. The posts made on the social media accounts of the Ministry constitute the main source of the sample selected in this context.

2.5. Data Collection Technique of the Research

In this study, document analysis method based on visual content is used. According to Bowen (2009) this method enables a systematic analysis of existing documents and visual contents. YouTube, the official social media account of the Ministry of Environment, Urbanisation and Climate Change, constitutes the main data source of this study. YouTube platform is one of the social media channels where the Ministry actively shares posts and establishes effective communication with its target audience. In this context, the data collection process was carried out through 15 public service announcements published on the Ministry's social media account YouTube on climate change between 2020-2024. These commercials were accessed on 08.07.2024 and were examined by three different experts within a month.

3. Results

This section presents the findings obtained as a result of the content analysis of 15 public service announcements on climate change published on the social media accounts of the Ministry of Environment, Urbanisation and Climate Change of the Republic of Turkey. During the content analysis process, each public service announcement was analysed together with its textual and visual elements, and the main themes, categories

and rhetorical codes contained in these announcements were determined. The findings obtained provide a framework for understanding to what extent these public service announcements serve the purpose of raising public awareness on climate change and creating social consciousness. In this section, the themes identified by the analysis, the rhetorical strategies used and the social effects of these elements will be detailed.

Table 1. *Slogans, Titles and Highlights of Public Service Announcement Content*

	Slogans Headlines	Highlighted
PSA-1	Let's sing it together; #WeAllHaveaWorld Environmentfest We all have a world (YouTube 1, 2024).	Theme: Collective responsibility. Message: Climate change is everyone's problem and there is a call to act together. Strategy: Use a hashtag to increase social media engagement.
PSA-2	Our climate tunnel #Çevrevest also welcomed its visitors  We all have a world (YouTube 2, 2024) .	Theme: Interaction and awareness. Message: It is desired to raise knowledge and awareness about climate change through activities. Strategy: Providing information in a fun environment.
PSA-3	We act with determination to eliminate the negative effects of climate change (YouTube 3, 2024).	Theme: Determination and action. Message: It is emphasised that the Ministry is taking an active and decisive stance. Strategy: Build public confidence with a strong call to action.
PSA-4	We launched the 'Turkey Carbon Market Development Project' in our fight against climate change (YouTube 4, 2024).	Theme: Project based solutions. Message: It is stated that climate change is being combated with concrete steps and projects. Strategy: Informing and attracting public attention through project promotion.
PSA-5	We Created 3D Climate Tunnel (YouTube 5, 2024).	Theme: Innovation and education. Message: Innovative tools are utilised for training purposes. Strategy: Attracting attention with visual and experiential learning.
PSA-6	Climate Change – Let us change before the climate changes (YouTube 6, 2021).	Theme: Call for change. Message: It is emphasised that individuals and society should be open to change. Strategy: Personal responsibility and a call to action.
PSA-7	Leave a world for us children, Let's write on it, dear World (YouTube 7, 2021).	Theme: Next generation. Message: The emphasis is on leaving a better world for children. Strategy: Mobilising the community through emotional connection.
PSA-8	Our Children and Environment / Zero Waste (YouTube 8, 2020).	Theme: Sustainability and education. Message: Increasing environmental awareness for future generations is emphasised. Strategy: Adopt a sustainable lifestyle with a zero waste target.

	Slogans Headlines	Highlighted
PSA-9	Effects of Climate Change on Living Things (YouTube 9, 2020).	Theme: Knowledge and awareness. Message: The effects of climate change on biodiversity are indicated. Strategy: Creating awareness in the society with educational content.
PSA-10	Some Natural Events Caused by Global Climate Change (YouTube 10, 2020).	Theme: The relationship between natural phenomena and climate. Message: The concrete effects of climate change are described. Strategy: Awareness of hazards is ensured through informative content.
PSA-11	We Use Our Investments in Favour of Nature (YouTube 11, 2020).	Theme: Sustainable investments. Message: It is stated that investments have been made that emphasise the purpose of nature conservation. Strategy: Supporting nature-friendly policies.
PSA-12	Effective Combating Climate Change, Zero Emission for a Clean Future (YouTube 12, 2020).	Theme: Emission reduction. Message: Clean energy and zero emission target. Strategy: Creating hope in the community by providing a vision for the future.
PSA-13	Desertification due to Climate Change (YouTube 13, 2020).	Theme: Desertification and climate relationship. Message: The importance of the environmental impacts of climate change is emphasised. Strategy: Emphasise the seriousness of desertification.
PSA-14	Let's Change Before the Climate Changes #OurWorldHome (YouTube 14, 2020).	Theme: Change and home ownership. Message: The message is that individuals must change in order to protect the Earth. Strategy: Increase participation with a personal call to action.
PSA-15	It is in our hands to preserve these images #ZeroWasteBlue (YouTube 15, 2020).	Theme: Nature conservation. Message: The need to protect natural beauties is emphasised. Strategy: Social media engagement to increase participation.

Through these titles and slogans, it is seen that a communication strategy that aims to raise social awareness, encourages participation, focuses on education and tries to establish an emotional bond is followed. Each title and slogan includes a call to raise awareness and take action on climate change.

The themes emerging in the public service announcement discourses are listed as follows:

- **Climate Change Awareness:** The seriousness of climate change, its impacts and the sense of urgency about it are emphasised (PSA4, PSA9, PSA10).
- **Call for Action:** It is emphasised that the society should take an active role in combating climate change (PSA1, PSA4, PSA6).

- **Sustainability and Nature Conservation:** Associations are made with sustainable lifestyles such as nature conservation, recycling and zero waste practices (PSA11, PSA13, PSA15).
- **Social Unity:** The message of acting together, social solidarity and creating collective consciousness is given (PSA1, PSA2, PSA7).
- **Policy and Strategy:** Information about Turkey's climate targets, projects and strategies are given (PSA4, PSA11, PSA12).

The categories that come to the forefront in the content of these themes in the discourse of public service announcements aim to reach a specific target audience and to provide a certain behavioural change. In this context, the prominent categories are listed as follows:

- **Interaction and Awareness:** Expressions such as 'Let's prevent climate change together' aim to inform people with a persuasive language while encouraging social participation (PSA1, PSA2, PSA7).
- **Critical Warnings:** Statements such as 'If we do not take action now, it may be too late tomorrow' create a sense of urgency and encourage individuals to take action (PSA9, PSA10, PSA12).
- **Targets and Projects:** Providing detailed information about Turkey's climate targets and projects provides credibility and concretises action plans (PSA4, PSA11, PSA12).
- **Emotional Bonding:** Statements emphasising the relationship between nature and human beings aim to establish an emotional bond in society (PSA6, PSA7, PSA15).

The most emphasised and prominent codes in the messages conveyed in the themes and categories of the public service announcements are climate change, zero waste, green transformation, nature protection, social solidarity, action plan, low carbon economy, recycling, clean energy and global warming.

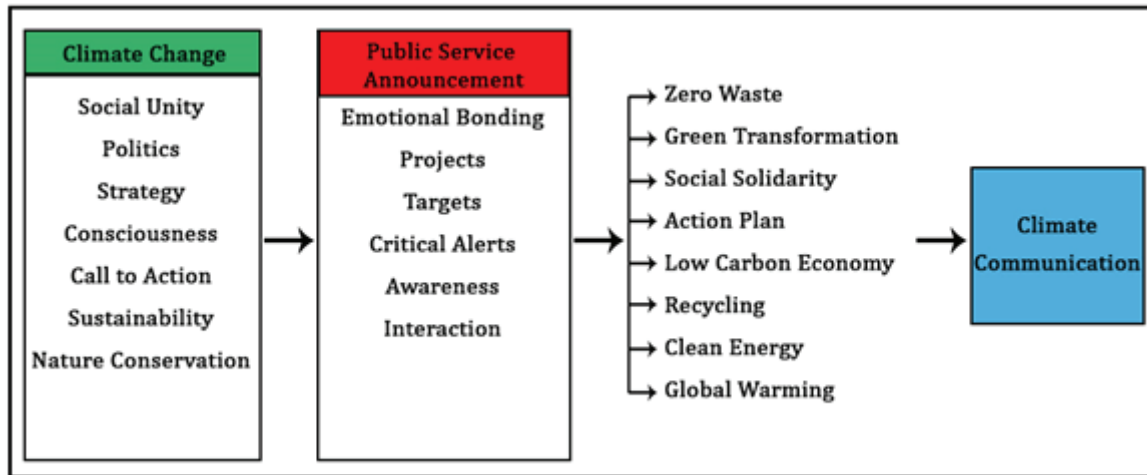


Figure 1. Thematic Coding

The public service announcements of the Ministry of Environment, Urbanisation and Climate Change of the Republic of Turkey effectively communicate Turkey's commitment and strategic goals in combating climate change to the public. The discourses reveal their potential to create social awareness and action, and also show that they are an important tool for informing the public on climate change and increasing their participation.

Rhetorical codes and techniques prominent in public service announcement discourses play an important role in ensuring effective communication. The main rhetorical codes and techniques used in these discourses are listed below:

- **Emotional Appeal (Pathos):** Expressions aimed at establishing an emotional connection are frequently used in discourses. For example, sentences such as ‘The nature in which we continue our lives is not a legacy of our ancestors but a trust of our children’ aim to increase environmental awareness by appealing to people’s emotional world. Such expressions deepen the relationship of individuals with nature and arouse the desire to take action. The continuity of life is emphasised (PSA7).
- **Logical Argument (Logos):** Statistics, scientific data and logical inferences are frequently used in discourses. For example, statements such as ‘Over 4 billion people have been affected in the last 20 years’ support the seriousness of climate change with concrete data. This helps the public to understand and be convinced about the issue of climate change and its impacts (PSA6, PSA9).
- **Social Bonding (Ethos):** The signature of official institutions such as the Ministry of Environment, Urbanisation and Climate Change provides credibility and authority. Expressions such as ‘Turkey is struggling against climate change’ emphasise the determination and responsibility of the public institution and build trust in the society (PSA4, PSA11).
- **Calls for Action:** In the discourses, there are frequently calls for action encouraging social unity with expressions such as ‘all together’, ‘together’. This makes individuals feel themselves as a part of the process and increases social participation (PSA1, PSA2).
- **Emphasis on the Future:** The discourses present a positive perspective towards the future and make people hopeful with goals such as ‘leaving a clean environment for our children’. This makes individuals feel responsible for the future (PSA6, PSA7).
- **Benchmarking and Comparison:** Public service announcements emphasise Turkey’s positive role in combating climate change and highlight Turkey’s position in the international arena through comparisons such as ‘one of the least polluting countries in the world’ (PSA4).
- **Use of Symbolic Language:** Metaphors and symbolic expressions used in public service announcements make the messages more effective and memorable. For example, the expression ‘we are not the sovereign power of nature, but only a part of our planet’ helps to question people’s perspectives on nature. (5, 15)
- **Double Meaning and Irony:** In some discourses, the consequences of being insensitive to climate change are expressed ironically. For example, expressions such as ‘the warming of the world is none of my business’ aim to make people think (PSA10).

These rhetorical techniques increase the impact of public service announcements and support public awareness of climate change. While the combination of emotional and logical elements aims to create a social movement, the elements of credibility and authority reinforce the seriousness of the messages.

The messages and values that come to the forefront for people on climate change are quite prominent in the public service announcement discourses. These messages and values are summarised below:

- **Emphasis on responsibility and trust:** The message is ‘nature is not a legacy of our ancestors, but a trust of our children.’ The value is the sense of responsibility towards future generations and the urgency of protecting nature (PSA6, PSA7).
- **Unity and Solidarity:** The message is ‘let’s prevent climate change together.’ The value in this regard is provided by calling for social unity and solidarity and joint action and by putting forward the idea that the contribution of each individual is important (PSA1, PSA4).
- **Education and Awareness:** The message is ‘recycling awareness needs to come into play.’ The value is realised on the subject of knowledge and awareness, and the awareness of individuals on climate change (PSA5, PSA8).
- **Taking Urgent Measures:** Message; ‘if we do not take measures now, it may be too late tomorrow.’ The value in this issue is about urgency and proactive approach, the necessity to take action immediately (PSA9, PSA10).
- **Conservation of Natural Resources:** The message is ‘Prevent the depletion of natural resources.’ The value is associated with sustainability and protection of natural resources and raising awareness in environmental sensitivity (PSA11, PSA15).
- **Investing for the Future:** Message; ‘ensures that we can leave a clean environment for future generations.’ The value in this issue is shaped in the focus of responsibility for the future, sustainable economic and environmental policies (PSA4, PSA12).
- **Persuasion and Information:** Message: ‘More than 4 billion people have been affected by disasters, the number and severity of which have increased with global warming in the last 20 years.’ The value was determined as providing persuasive information and informing the public about the effects of climate change (PSA6, PSA9).
- **Sensitivity and Awareness:** Message; ‘we are not the sovereign power of nature, we are only a part of our planet.’ Value: Ecological awareness, questioning the relationship between human beings and nature (PSA7, PSA8).
- **Gift for Future Generations:** Message; ‘Leave a world for us children.’ The value in this subject is put forward as emphasising the importance of protection and protective measures for children and future generations (PSA4, PSA12).

In public service announcements, messages to people on climate change emphasise values such as responsibility, unity, urgency, awareness and investing in the future. These values aim to raise awareness in the society towards combating climate change and encourage individuals to take an active role in this struggle.

Social awareness raised through public service announcements on climate change is reinforced through social media interactions. In this context, awareness is raised through public service announcements. Public service announcements are generally prepared by government agencies or non-governmental organisations to inform the public and encourage action. Such spots present various messages through emotional, logical and social values to introduce important social and environmental problems such as climate change to the society. Citizens are informed by establishing emotional bonds through public service announcements, calls for action and urgency announcements, and sharing information and statistics. In the reinforcement of social media interactions, sharing and speed of dissemination, Hashtag application, social participation and interaction, sharing of visual and video contents and community formation are utilised. At this point, a synergy is created in the interaction between public service announcements and social media. The interaction of public service announcements with social media enables both platforms to

work in a complementary manner. While public service announcements provide concrete and effective messages to raise social awareness, social media enables these messages to reach large masses and integrate these messages into daily life. Raising social awareness on climate change is reinforced with the contributions of social media. Social media enables viewers to interact with public service announcements by commenting on them, sharing their own thoughts, and sometimes even 'replying'. These interactions help messages to be adopted by large masses and turn into a social movement. For example, when a public service announcement on climate change is broadcast, social media users can support the message of the announcement by sharing and commenting on their own accounts. By sharing their personal steps and success stories in the fight against climate change, individuals can raise social awareness and further strengthen the movement. In this framework, the social awareness created by public service announcements is further strengthened by social media interactions. While public service announcements are an effective tool to convey important messages to a wide audience, social media enables these messages to resonate more deeply in society in an interactive way. The awareness provided by public service announcements is reinforced by the sharing and interaction areas offered by social media, paving the way for a wider and permanent awareness.

The effects of the language and visual elements used in the Ministry's public service announcements on climate change were analysed in terms of emotional and cognitive responses. The language used in public service announcements is generally created using emotional appeal (pathos) and aims to appeal to the emotional world of the viewers. Since it is necessary to draw attention to an urgent problem such as climate change, this language is designed to make people question their relationship with nature and arouse a sense of responsibility. In this context, messages of responsibility and concern, emergency and despair, and commitment and solidarity come to the fore. In addition, visual elements are important tools that reinforce the emotional impact of language. The visuals used in public service announcements usually present the beauties of nature, destruction of nature or the effects of climate change to the audience visually. The emotional responses triggered by public service announcement visuals are listed as surprise and shock, sadness and empathy, inspiration and motivation. In addition, cognitive responses are reactions to how viewers make sense of the message and how their level of awareness about climate change has increased. The language used in the public service ads of the Ministry generally aims to increase the knowledge level of the viewers by presenting logical arguments (logos). In this context, the language used in public service announcements evokes information and understanding, complexity and comparison, and solution and action proposals as cognitive responses. Visual elements, on the other hand, affect viewers' processes of acquiring information about climate change. Visuals help viewers to understand the events, to think about solutions and to comprehend climate change with various emotional states. Data and statistics visuals, symbolism and metaphors were identified as visual elements used in conceptualisation. The language and visual elements used in the Ministry's public service announcements on climate change are deliberately designed to create both emotional and cognitive responses in the viewers. While emotional responses generally trigger feelings of responsibility, urgency, empathy and inspiration, cognitive responses increase viewers' level of knowledge, help them understand the situation and make them think about solutions. Together, these elements create a deeper awareness of climate change and a desire to take action.

Conclusion

This study aims to analyse the messages conveyed by the Ministry of Environment, Urbanisation and Climate Change to the society on climate change through public service announcements and the values underlying these messages. The findings reveal that a strategic communication approach has been adopted to raise awareness on climate change.

The analysed public service announcements show that an informative language is used about the urgency and impacts of climate change. Expressions such as *'If we do not take action now, it may be too late tomorrow'* encourage the society to take action immediately and draw attention to the seriousness of the climate crisis. Such messages aim to raise environmental awareness of individuals and strengthen the spirit of social solidarity.

Aydın (2016), in his academic study on environmental communication, analysed 32 environmental public service announcements broadcast on TRT 1 between 2012 and 2015 and conducted semi-structured in-depth interviews with 15 people. It was determined that 25% of the public service announcements were prepared by the Ministry of Environment and Urbanisation, 25% by the Ministry of Forestry and Water Affairs, and the remaining parts (50%) by other ministries and associations. It was determined that the longest public service announcements were 58 seconds and the shortest 14 seconds. As a result of the research, it was concluded that the participants found the public service announcements insufficient in terms of quality, that they lack attention-grabbing features and that public service announcements should be made in different areas (e.g. children). In the research on public service announcements broadcasted by the Turkish Radio and Television Corporation in 2015, 123 public service announcements were selected through sampling and the thematic characteristics of the selected public service announcements were tried to be revealed. Within the findings obtained in this context, it was determined that the public service announcements published in 2015 were mostly prepared by public institutions and organisations. In these public service announcements, it was determined that the concepts of health, education and military service came to the fore as themes. In addition, it was determined that it was aimed to make citizens aware of their duties and responsibilities by using the language of 'we' in the public service announcements (Ünal and Tanca, 2016). The study based on public service ads on plastic waste-based environmental pollution was analysed using semiotics technique. As a result of the analyses, it was determined that environmental pollution to which living creatures in the seas are exposed was included in public service ads. In addition, it was determined that it was aimed to raise awareness among people against plastic wastes by reflecting that living creatures in the seas were negatively affected in public service announcements (Darı, 2022). Aytekin (2016), on the other hand, focused on two campaigns in the field of occupational health and safety in his study on public service announcements. Content analysis was applied in these campaigns and as a result of the analyses, it was concluded that the concept of public interest was damaged. In addition, he determined that the public spots prepared by the Ministry aimed to benefit the government policies, not the public.

The expressions *'together'* and *'all together'* emphasised in public service announcements reinforce that combating climate change is a social responsibility. This approach enables individuals to see themselves as active actors in this struggle. The message *'Let's prevent climate change together'* emphasises the importance of collective action and encourages solidarity and unity in society.

Public service announcements emphasise that the protection of nature is a responsibility not only for the current generation but also for future generations. The phrase '*entrusted to our children*' aims to increase social awareness on environmental protection and sustainability. Such expressions cause individuals to think about what kind of a world they will leave for the future.

Frequent mention of issues such as recycling and waste management aims to raise awareness in society in these areas. By emphasising the importance of recycling awareness, individuals are encouraged to acquire environmentally friendly habits. This creates a social structure that supports environmental sustainability in the long run.

Expressions such as '*zero waste*' and '*protection of natural resources*', which are frequently used in public service announcements, form the basis of sustainability and ecological awareness. In this context, society is given the message that lifestyles in harmony with nature should be adopted and individuals are encouraged to act in this direction.

This study shows that Turkey's communication strategies on climate change are effective in terms of raising social awareness and mobilising individuals. The rhetoric and messages used in public service announcements aim to raise awareness in the society on combating climate change and invite individuals to become active participants in this struggle. In addition to this, the recommendations determined to create communication-oriented awareness and awareness on climate change are listed as follows:

- **Monitoring and Evaluation:** A systematic evaluation process should be established to monitor the effectiveness of communication campaigns. Communication strategies should be continuously updated by receiving feedback from target audiences.
- **Local Participation and Cooperation:** Collaboration with local governments and civil society organisations is important to encourage social participation. By organising local events, workshops and information meetings, the participation of individuals in actions related to climate change can be increased.
- **Education Programmes:** Educational programmes on climate change should be organised in schools, universities and community centres to raise environmental awareness in the community. These programmes can be enriched with interactive materials and practical projects.
- **Storytelling:** Telling stories about climate change by establishing an emotional connection can increase individuals' interest in the issue. For example, by sharing stories of people or regions affected by climate change, a more concrete awareness can be created.
- **Digital and Social Media Usage:** It is important to use today's communication tools in the most effective way in order to provide more interaction for the young generation and individuals who are tech-savvy. Campaigns and competitions to be organised on social media platforms can increase social participation.
- **Target Audience Analysis:** In order to increase the effectiveness of public service announcements, customised messages should be developed according to the demographic and socio-cultural characteristics of target audiences. By taking into consideration different age groups, education levels and lifestyles, communication strategies on climate change can be designed.

These recommendations aim to increase social awareness and mobilise individuals by making Turkey's communication strategies more effective in combating climate change.

It is thought that communication-indexed approaches will contribute to taking important steps towards creating a more sustainable and environmentally friendly society.

Future studies can develop a more in-depth understanding by examining how different social segments respond to messages on climate change and how the impact of these messages changes over time. In addition, by making comparative analyses with the climate change communication strategies of different countries, it can contribute to the determination of effective methods. Thus, it can help to develop more comprehensive and effective strategies in combating climate change.

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Climate Change and Media: An Analysis of Public Service Announcements and Communication

Public Service Announcements of the Ministry of Environment, Urbanisation and Climate Change

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Extended Abstract

Climate change refers to long-term changes in the natural climate system. Climate change is a concept directly related to the increase in greenhouse gas emissions caused by human activities (especially the use of fossil fuels, deforestation and industrialisation). This situation leads to an increase in the concentration of carbon dioxide, methane and other greenhouse gases in the atmosphere, causing an increase in global temperatures and imbalances in the climate system. Climate change causes not only environmental problems, but also serious consequences in the economic, social and health fields, posing threats such as decreasing water resources, decreasing agricultural productivity and increasing natural disasters. In this context, combating climate change is of vital importance for the sustainability of societies and leaving a livable world to future generations.

This study aims to examine the impact of these communication strategies on social perception and awareness through content analysis of public service ads and discourses prepared to combat climate change in Turkey. Climate change stands out as one of the most important environmental problems in the world today; it manifests itself with problems such as depletion of natural resources, climate disasters and decrease in biodiversity. In this context, the campaigns carried out by the Ministry of Environment, Urbanisation and Climate Change aim to raise awareness of these problems.

In this study, the slogans and discourses used in the public service announcements prepared by the Ministry of Environment, Urbanisation and Climate Change and shared on its official social media accounts were analysed by content analysis method used in qualitative research methods. Rhetorical codes, the language used and the themes of the messages conveyed were analysed through the determined data set. Slogans and discourses were classified under certain categories and evaluated in terms of their potential to influence social perception. Thus, a comprehensive assessment was made on public communication strategies on climate change and whether they are effective or not. This methodological approach both provides an understanding of the current situation and enables the development of recommendations for future communication strategies.

Firstly, the titles and slogans used in public service announcements were analysed and it was determined that these slogans contain nature and climate friendly messages, encourage social unity and aim to raise environmental awareness. For example, slogans such as 'Let's change before the climate changes' reinforce the sense of personal responsibility by calling individuals to take action. In addition, slogans and hashtags such as 'let's all say it together; #HepimizinBirDünyasıVar' emphasise social solidarity and the need to act together. In addition, the discourses in the public service announcement were

analysed in a similar way, and it was observed that the urgency of climate change, the importance of protecting nature and individual contributions came to the fore in these discourses. For example, the statement ‘if we do not take action now, it may be too late tomorrow’ emphasises the seriousness of the climate crisis and calls for urgent action. Moreover, concepts such as recycling, zero waste and protection of nature are placed at the centre of efforts to raise social awareness.

In terms of communication, the rhetorical codes and techniques used in public service announcements aim to establish emotional bonds, give concrete examples and reach large masses. Through slogans and discourses, an information and education process on climate change was initiated and a call was made for social participation. In this context, communication strategies such as target audience analysis, effective use of social media and storytelling are recommended to make messages about climate change more effective.

The findings of the research show that certain values should be emphasised in order for messages on climate change to have a wider impact on society. These values include unity, responsibility, respect for nature and sustainability. For example, the statement ‘we are not the sovereign power of nature, but only a part of our planet’ reminds individuals of their responsibilities towards nature.

In conclusion, this study reveals the potential of public service announcements and discourses in Turkey to raise awareness on climate change and offers recommendations on communication strategies. Communication-based recommendations emphasise the need for a more effective communication strategy, supported by elements such as target audience analysis, use of digital media, training programmes and local participation. In this context, it is aimed to increase social awareness in the fight against climate change, to mobilise individuals to take action and to popularise environmentally friendly practices.

Keywords: Climate Change, Ministry, Public Service Announcement, Communication, Content Analysis.

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Research Article | Araştırma Makalesi

Analysis of Environmental Documentaries on Netflix in Terms of Environmental Discourses

Netflix'teki Çevre Konulu Belgesellerin Çevre Söylemleri Bakımından İncelenmesi

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Abstract

The purpose of this study is to analyze the environmental discourses in environment-themed documentaries available on the Netflix platform. In this article, seven documentaries were examined through discourse analysis, and the discourses present in these documentaries were identified. According to the analysis, three main discourses were found: the Ecosystem Discourse, the Arcadian Discourse and Environmental Justice Discourse. In *Cowspiracy: The Sustainability Secret*, it is emphasized that organizations claiming to protect nature disregard scientific data. *Kiss the Ground* focuses on human-induced environmental degradation and efforts to address environmental issues. *Breaking Boundaries: The Science of Our Planet* indicates that humanity has already exceeded the critical thresholds for sustaining life on Earth. In *David Attenborough: A Life on Our Planet*, attention is drawn to the fact that the planet can exist independently of humans. *The Bubble: A Reef Revived* underlines the perfection of the world's micro-level systems. *Brave Blue World* illustrates the global water crisis and explains how its effects differ based on socio-economic statuses. Lastly, *Youth v Gov* focuses on the varying impacts of the global climate crisis across different regions.

Keywords: Environmental Sociology, Ecosystem Discourse, Arcadian Discourse, Environmental Justice Discourse, Documentary, Netflix.

Öz

Bu makalenin amacı, Netflix platformunda yer alan çevre temalı belgesellerin çevre söylemleri açısından incelenmesidir. Bu makalede, söylem analizi yöntemiyle yedi adet belgesel incelenmiş ve bu belgesellerdeki söylemler ortaya çıkarılmıştır. Bu analize göre belgesellerde insanın doğayla olan mücadelesinin doğaya ve insana zarar verdiğini anlatan Ekosistem söylemi, insanın doğaya karşı mücadelesini kötüleyen ve doğayı yücelten Arkadyan söylem ve çevre sorunlarının yaşattığı olumsuz etkilerin sosyo-ekonomik statülere göre değiştiğini vurgulayan Çevresel Adalet söylemine göre sunumlar tespit edilmiştir. *Cowspiracy: Sürdürülebilirliğin Sırrı* belgeselinde bilimsel verilerden yola çıkarak doğayı koruduğunu iddia eden kuruluşların bu verileri önemsemediği vurgulanmıştır. *Kiss the Ground*'da insanın çevreyi bozması ve çevre sorunlarına çözüm bulması üzerinde durulmuştur. *Gezegenimizin Kritik Eşikleri*'nde dünyamızın aşılmaması gereken eşiklerini çoktan aştığımız belirtilmiştir. *David Attenborough: Gezegenimizden Bir Yaşam*'da dünyanın insandan bağımsız şekilde varlığını sürdürebildiği gerçeği üzerinde durulmuştur. *Baloncuk: Resifin Mucizeleri*'nde dünyanın mikro düzeyde mükemmel bir sistem olduğuna değinilmiştir. *Cesur Mavi Dünya*'da su sorununun küresel olarak gösterilmesine karşın aslında sosyo-ekonomik statülere göre nasıl değiştiği açıklanmıştır. Son belgesel olan *Gençlerin İklim Davası*'nda küresel iklim krizinin farklı bölgeleri etkilemesi üzerinde durulmuştur. Sonuç olarak bu makalede ele aldığımız belgeseller, çevre söylemi konusunda farklı perspektiflere odaklanmakta, çevre sorunları ve bu sorunlara getirilen çözüm yollarını değişik açılardan görmek ve bunlara yönelik söylemler üretmektedir.

Anahtar Kelimeler: Çevre sosyolojisi, Ekosistem söylemi, Arkadyan söylem, Çevresel Adalet söylemi, Belgesel, Netflix.



Introduction

This article focuses on the analysis of environmental-themed documentaries based on their environmental discourses. The increasing viewership of documentaries and the growing interest in environmental issues have played a significant role in this selection. Considering that the Netflix platform is likely to place more emphasis on this area, keeping environmental topics on the agenda and conducting in-depth analyses are of critical importance.

The purpose of this study is to analyze the environmental discourses in environment-themed documentaries available on the Netflix platform. The article begins with explanations of the fundamental concepts in the literature. Subsequently, the relevant literature in the field is presented. Following this, the methodology is explained, and the applied method is specified. After the methodology section, the findings obtained from the discourse analysis are presented. Finally, an evaluation of the findings is provided within the framework of the study.

1. Literature Review

Social movements have existed throughout history, reflecting the attitudes and mindsets of the societies they emerge within (Türkdoğan, 1988). The post-World War II period, in particular, stands out as an era worth examining in terms of social movements. Before the war, the prominence of peasant and labor movements gave way to new forms of movements in the post-war era. In the United States, for instance, the rapid rise of prosperity after the war shifted labor organizations to the background. The focus of movement dynamics transitioned from the oppressed working class to broader societal issues due to rising prosperity. Traditional social movements, such as labor movements, transformed into different forms, often referred to as “new left” movements (Wallerstein, 1993). This shift in prosperous societies introduced a new dimension to social movements, resulting in the emergence of various new types of movements (Yıldırım, 2021). Among these, environmental movements hold a significant position. Although environmental movements often arise on a local or small scale, their ideas can resonate universally (Tranter, 2004). According to Roussopoulos, these movements are rooted in leftist ideologies. Influenced by the intellectual climate of the 1960s, these movements expanded and gained momentum in the 1970s, positioning themselves as critiques of affluent societies (Roussopoulos, 2017). Environmental movements, though relatively recent in origin, are fundamentally leftist movements critical of affluent societies. Emerging in the 1960s as part of broader critical movements, they gained greater prominence in the 1970s. These movements, often labeled as “new social movements” since the 1970s, have continued to grow (Tranter, 2004). Leipold, Feindt, Winkel, and Keller highlight the significant increase in new social movements over the past 25 years (Leipold et al., 2019). Tilly also notes the rapid rise of such movements between 1973 and 1993 (Tilly, 2004). Davulcu emphasizes the necessity of alternative media alongside mainstream media for the widespread dissemination of environmental movements (Davulcu, 2019). Öztürk, on the other hand, underscores the importance of protests in addition to media campaigns (Öztürk, 2017).

Environmental sociology, one of the subfields of sociology, is a relatively new discipline. Although its earliest studies date back to the early 1960s, the subject did not receive sufficient attention during that period (Bookchin, 2011). Environmental sociology emerged and expanded as a result of the growing interest in environmental issues, driven

by the rise of new social movements. Its establishment can primarily be attributed to the increasing popularity of environmental topics. This grassroots movement gained momentum due to the influence of *Silent Spring*, a work highlighting the effects of toxic substances used in agriculture, and the subsequent popularity of *The Limits to Growth*, published in 1972. In the United States, however, the discipline's growth was further accelerated by challenges related to resource scarcity and the energy crisis. These issues drew significant public interest, attracting the attention of environmental researchers. As a result, environmental sociology began with studies focusing on modern industry and its impact on the lived environment. The development of environmental sociology has varied across countries, reflecting different foundational perspectives. For instance, in the Netherlands, it emerged around issues of agriculture and risk assessment, whereas in the United Kingdom, it took shape within the framework of social class and industrialization. In contrast, environmental sociology was established later in Japan and South Korea, with its foundations laid in the early 1990s. Hannigan, discussing the early stages of the field, describes the current state of environmental sociology as both promising and disappointing (Hannigan, 2006). The establishment of the discipline was driven by grassroots demands and the increasing prominence of environmental concerns. The environment found its place in sociological research as it distinguished itself from urban studies (Tosun, 2017). In recent years, environmentalists have emphasized that environmental issues affect the entire world and that environmental problems represent a shared global concern. Accordingly, they argue for the need for the discipline's development at a global level (Milton, 1996). The typical emergence patterns of new social movements are also evident in the development of environmental sociology. Despite these advancements, environmental sociology is still regarded as a field that "needs to prove itself" (Eryılmaz, 2017b).

The lack of knowledge about environmental issues, public indifference, and misinformation have exacerbated prejudices against this field. To challenge these misconceptions and increase public interest in environmental matters, the concept of environmental communication has emerged. Environmental problems continue to escalate, regardless of public awareness. Therefore, the initial studies in the field of environmental communication focused on protecting the existing environment. Over time, various perspectives have developed within the realm of environmental communication. According to the materialist-symbolic discourse, nature is positioned as external to humanity. A second perspective involves an ideological critique of the human-nature interaction, aiming to examine dominant environmental discourses and expose their harmful aspects. The practice-action theory, on the other hand, emphasizes that environmental communication goes beyond merely describing the current situation; it seeks to change it. Through organizing panels, conferences, and short films, this approach aims to influence attitudes and behaviors regarding environmental issues (Özmen, 2011). Despite these developments, social theory still has limited contributions to make regarding the environment and nature (Lockie, 2004).

Environmental communication established itself as a recognized field only in the 1980s. Considering its scope, research topics, and objectives, it is inherently a multidisciplinary domain. While it relies on social sciences to understand and explain the relationship between humans and nature, it collaborates with natural sciences to base its insights on scientific evidence (Çetin, 2020). Environmental communication is a multidisciplinary field that values both communication processes and environmental issues.

Our perspective on the environment is generally explained through constructionist processes. Our mental framework regarding what the environment is and how it is perceived results from these construction processes. In this regard, since the 1980s and 1990s, the environmental issue has been closely intertwined with social constructivism and communication (Mahl & Guenther, 2023). From a constructivist perspective, the design thinking approach can also manage political initiatives. As the environment is perceived through a constructed process, human emotions are also influenced in this process. Anderson, demonstrated the impact of celebrities in raising awareness about environmental issues within the social construction process (Anderson, 2011). Similarly, Doyle, Farrell, and Goodman, observed that the discourses of celebrities regarding environmental issues were effective in creating environmental sensitivity (Doyle et al., 2017). Özberk stated that environmental processes affect human emotions, with environmental losses causing negative emotional impacts, potentially leading to feelings of grief and melancholy. He also noted that the way environmental disasters are perceived can evoke emotions in individuals (Özberk, 2023). Burke emphasized the importance of our social environment, communication opportunities, and the media products we consume in the formation of identity (Burke, 2004). This suggests that environmental issues can also be evaluated from a social constructivist perspective. Boykoff and Boykoff's studies illustrated how the discourses of media organizations regarding environmental issues influence and guide individuals (Boykoff & Boykoff, 2004). The perception and creation of the environment are the results of constructive processes. Therefore, environmental thinkers aim to eliminate the human-nature dichotomy. They believe that the binary structure, which has been mentally constructed and separated, does not offer a sustainable system for the future of humanity and nature. Elcandırılı emphasized the importance of the thoughts of post-humanists, who advocate for the elimination of this dual structure (Elcandırılı, 2021).

It is not only important to identify the state of the environment, but also how this state is explained. The connection between environmental issues and social processes has made environmental discourse essential. The mere existence of environmental problems is not enough for them to be perceived as such. It is also necessary for these problems to be made visible in the media and political arenas. Therefore, environmental discourse seeks to establish the connection between society and the environment using specific strategies and narrative techniques. While bringing environmental issues to the forefront is significant, how these issues are presented is even more crucial (Brossard et al., 2004). Carvalho emphasized the importance of environmental discourse in shaping sensitivities toward environmental issues and influencing political stances (Carvalho, 2010). It has also been observed that environmental discourses manifest differently in developed and developing countries (Erbil, 2006). Environmental discourse is one of the key steps in addressing the emergence of environmental problems and preventing them. It also plays an important role in implementing corrective policies and fostering societal awareness. It is clear that to overcome the perception of nature as the "other," environmental discourse needs to be prioritized (Odabaş, 2018). Tateishi revealed that companies claiming to be sustainable and environmentally friendly often continue to harm the environment (Tateishi, 2017). Similarly, Fernando, Sivakumaran, and Suganthi discussed whether firms are genuinely environmentally friendly (Fernando et al., 2014). In some cases, businesses may emphasize environmental discourse as a strategy to protect their own interests (Grimmer & Bingham, 2013). While these strategies may have positive effects, their negative impacts should not be overlooked (Guo et al., 2014).

2. Methodology

This study adopts the Critical Social Science approach. As Neuman asserts, Critical Social Science is a perspective that enables the discovery of the underlying reality beneath phenomena, exposes false consciousness, and empowers individuals to transform society (Neuman, 2016). In line with the Critical Social Science approach, discourse analysis plays a crucial role in examining the intended message of the text in depth and accurately interpreting messages that may not be immediately visible on the surface. Whether applied to a textual or visual work, discourse analysis has always been a powerful method for conveying meaning (Zhu & Huang, 2023). Furthermore, discourses play a significant role in uncovering different layers beneath the visible surface (Foucault, 2001). While discourses inherently contain deep meanings (Kendall & Wickam, 2016), they are also directly linked to relations of power and authority (Falzon, 2001). Whereas Habermas perceives the discourse process as a natural flow, Foucault, on the contrary, argues that discourses should be critically examined and scrutinized in depth (Hajer & Versteeg, 2005). Discourse analysis serves to uncover the underlying reality beneath the apparent. This method not only allows for the analysis of a single film or documentary (Rapo, 2021) but also provides the opportunity for comparative analyses across multiple works.

In this article, which poses the question, “How is the environmental issue presented in documentaries?”, discourse analysis will be applied to examine how seven different documentaries address the environment. These documentaries include *Cowspiracy: The Sustainability Secret*, *Kiss the Ground*, *Critical Thresholds of Our Planet*, *David Attenborough: A Life on Our Planet*, *Bubble: The Wonders of the Reef*, *Brave Blue World*, and *Youth Climate Case*. The selected documentaries were chosen due to their availability on Netflix, the most-watched digital platform globally, and their focus on environmental topics. Documentaries that are not available on Netflix or do not address environmental issues are excluded from this study.

3. Findings

The examination of popular environmental documentaries available on the Netflix platform has revealed that three distinct discourses dominate the narratives. These are the Ecosystem discourse, the Arcadian discourse, and the Environmental Justice discourse. Each discourse encompasses a unique conceptual framework, reflecting different ways of understanding and interpreting environmental issues. Consequently, each discourse is rooted in a distinct intellectual background.

In this study, these categories are analyzed sequentially. The first section primarily focuses on documentaries that predominantly reflect the Ecosystem discourse. It has been observed that documentaries emphasizing the Ecosystem discourse exhibit notable differences in terms of discourse compared to other types of environmental documentaries.

3.1. Ecosystem Discourse

Harvey has pointed out that capitalism is frequently confronted with environmental issues (Harvey, 1999). Capitalist production processes often harm nature in the pursuit of maximizing profit. In this context, the Ecosystem discourse highlights that human impacts on nature damage its structure. This damage is understood, articulated, and substantiated through a scientific perspective. The discourse is primarily constructed around the human-nature balance, aiming to highlight the harmful effects humans have

on the environment. At its core, this discourse suggests that humans, who damage nature, can also restore it through science (Hannigan, 2006).

Bookchin argues that technology can be used in the processes of reconstructing nature (Bookchin, 1994). He notes that technology is not only destructive but, as seen in the Paleolithic and Neolithic eras, it can also lead to significant transformations (Bookchin, 1996). According to the Ecosystem discourse, it is humanity that both damages and has the potential to repair nature (Rikoon, 2009). In this paper, the documentaries *Cowspiracy: The Sustainability Secret*, *Kiss the Ground*, and *Critical Thresholds of Our Planet* will be examined within the framework of the Ecosystem discourse.

Cowspiracy: Sustainability Secret, 2014¹

The 2014 documentary portrays the transformation of Kip, a child who grew up in a typical middle-class American family with a rather ordinary childhood, into an environmentally conscious individual. The documentary opens strongly by featuring a speech by Bruce Hamilton, a member of the Sierra Club. In this segment, Hamilton discusses how climate change will affect all of humanity and warns that, in the near future, the world will become an uninhabitable place. This part of the documentary presents an apocalyptic scenario to the audience, providing information about the dangers of the climate change crisis.

The main character of the documentary, Kip, watches the film *An Inconvenient Truth*, which informs him about the scale of the current environmental threats. This viewing prompts Kip to believe that he must take action to address these issues. The apocalyptic scenario presented in *An Inconvenient Truth* is reinforced in the documentary, with the opening section emphasizing a strong sense of impending doom. This apocalyptic narrative is a key element in the documentary's initial portrayal of the environmental crisis.

Kip examines reports published on the livestock industry, with particular attention given to a report released by the United Nations. In this report, he discovers that the damage caused by the livestock sector to the environment holds a significantly larger share compared to other industries.

My friend shared a United Nations report with me, which stated that raising livestock produces more greenhouse gases than the entire transportation sector. In other words, the meat and dairy industries emit more greenhouse gases than all cars, trucks, trains, ships, and airplanes combined. As I began researching, I found that the United Nations and other organizations not only inform the public about the role livestock plays in global warming but also emphasize that these industries are the primary causes of resource consumption and environmental degradation, and that they are contributing to the destruction of the planet (4:11).

The emphasis is placed on the fact that the sector destroying the planet is the livestock industry. Among all sectors, livestock farming stands out as the most harmful to the environment. The practices surrounding the domestication and consumption of animals are highlighted as causing immense damage to nature and the environment.

Ten thousand years ago, free-living animals made up 99% of the living beings on Earth, with humans constituting only 1%. Today, just ten thousand years later—a very short time in evolutionary terms—humans and the animals we own as property make up 98% of the living beings on Earth, while free-living wild animals now account for just 2%. In other words, we have stolen the world from wild, free-living animals (14:04)

The documentary criticizes humanity's domination over nature, stating that humans and the animals we control now constitute 98% of all living beings on Earth. According to this ratio, nearly the entire world exists solely to serve humanity. This situation is portrayed as us having "stolen" the world from other living creatures.

The documentary proposes a solution in the form of a vegan lifestyle. While the unsustainability of animal-based production is repeatedly emphasized, plant-based sustainability is presented as much more feasible, accompanied by uplifting and hopeful background music (1:25:59). The sustainability of a vegan diet is further supported by scientific arguments. A doctor, who states that they have been vegan for a long time, explains that a vegan lifestyle is both sufficient and sustainable for humans. Thus, by leveraging the authority of science, the documentary asserts that adopting a vegan diet is essential to protect the world.

Looking at the documentary as a whole, the idea that the balance of the world has been disrupted, and that this disruption is caused by human activity, points to an ecological discourse. After reinforcing this argument with apocalyptic scenarios, the argument is further supported by scientific findings, ultimately leading to recommendations for adopting a vegan lifestyle. The documentary's primary goal is to demonstrate that ecological sustainability is achievable and how it can be realized. After presenting important information regarding the climate change crisis, it also offers a potential solution.

Kiss The Ground, 2020²

The 2020 documentary *Kiss The Ground* focuses on the human-nature relationship within the context of the ecosystem discourse. From a scientific perspective, it suggests that through the application of appropriate policies, sustainable nature can be achieved through efficient farming practices. According to the documentary, current agricultural policies are inefficient and unsuccessful. The problems the world faces are the result of these flawed agricultural practices. Reversing this situation and acting within the framework of scientific thinking can restore nature's fertility. The harm done to the environment through incorrect farming practices can be reversed by implementing the right agricultural methods. In addressing a past drought, U.S. President Roosevelt's statement, "We will solve the issues of famine and erosion not by fighting nature but by making peace with it" (5:28), highlights that the solution lies with humanity. While the phrase "making peace with nature" evokes an Arkadian discourse, the focus of the message is on the "solution," which can be found through humanity and science.

In the documentary, the reduction of environmental issues through the soil's ability to store carbon is emphasized. The flow of the narrative progresses through the idea that excessive carbon emissions lead to climate change and reduce the productivity of agricultural land. The soil is presented as an important "tool" for carbon storage. Here, the soil serves as an instrument. The production of carbon itself is not considered an issue, but the problem arises when it comes to storing it. The documentary stresses that carbon production is not inherently harmful, and even refers to carbon as the "good guy" (7:55). From this perspective, the steps taken to store carbon are highlighted in the documentary. Scientific findings are frequently referenced, and solutions are developed rationally through data.

Ladies and gentlemen, and dear colleagues, we have an incredible potential with all agricultural lands and forest soils. It is truly remarkable that we have been able to develop a real solution to store an amount of carbon equal to the amount humanity emits each year in the fight against climate change. The power we have to achieve this together is one-fourth (32:09).

The words of the French Minister of Agriculture, such as “fighting climate change,” “producing solutions,” and “the power we have is one-fourth,” can be interpreted within the framework of the ecosystem discourse. This speech, delivered at an international forum with his colleagues and scientists, plays a crucial role in determining how global issues are addressed and solutions are proposed. It is suggested that, with the necessary measures in place, the world could return to its former state in twenty years. This conclusion is reached through scientific projections.

Our goal was to restore the health of the soil in order to teach ecological principles. We wanted to guide people and inspire them to become part of the planet and to have a better relationship with it. In the past, there wasn't a single article about soil health in farm magazines. Now, there isn't a single magazine that doesn't include something about soil health. This gives me hope (1:10:02).

The importance of the content in farming magazines and the visible change reflected in them is emphasized. The extent of this change can be measured through the farming magazines that feature scientific content. Ecological principles are presented as “teachable data.” The main goal is to “guide people.” The documentary stresses that following a scientific approach will open the way for change. Thus, the emphasis on scientific rigor within the ecosystem discourse is clearly highlighted.

Humanity was born in paradise. If we rejuvenate all the degraded lands on Earth, we can return to paradise. If we start building the system to restore and renew ecology now, we will move in that direction. The revival of a dried-up stream bringing fertile lands, and the return of biodiversity to a completely devastated area, are things that will deeply satisfy everyone (1:15:13)

The belief is that humans are the ones who will protect and restore the ecosystem. Here, nature is depicted as being dependent on human actions. The ecosystem is defined in terms of human dominance over nature. The damage humans have inflicted on nature can be reversed by humans themselves. The primary goal of the documentary is to transition to efficient agricultural production based on scientific data.

Breaking Boundries, 2021³

The 2021 documentary *Breaking Boundaries: The Science of Our Planet* examines the major crises our planet is facing and their underlying causes. David Attenborough and Johan Rockström attempt to prove that the decline in biodiversity is a result of humanity's damage to the environment. The documentary emphasizes that we are currently in a period where the human struggle to dominate nature has turned against humanity itself. It highlights the Holocene epoch, a critical period in the formation of the Earth and the beginning of life, where temperature fluctuations remained within a narrow range, allowing life to thrive. However, especially in the last 150 years, this situation has changed dramatically. The temperature differences on Earth have been increasing, and life is being negatively affected by this change. The documentary points out that for life to continue on Earth, various systems must function properly, and each system has its own threshold. It

is evident in the documentary that these thresholds have been largely surpassed, and the Earth is heading in a negative direction. It is also clearly stated that issues in one system negatively affect other systems as well (15:34).

The first threshold leading to the imbalance of the Earth, the melting of glaciers, accelerated with the Industrial Revolution (14:07). The destruction of the Amazon rainforest for agriculture and livestock, leading to the loss of biodiversity, signifies the crossing of the second threshold (20:55). The excessive use of nitrogen and phosphorus and their uncontrolled release into nature led to the crossing of the third threshold (37:35). Aerosol pollution and the excessive use of fossil fuels have been masking current climate change and global warming. However, the serious consequences of this rising temperature are still ahead of us. This marks the crossing of the fourth threshold (43:24). The depletion of the ozone layer is highlighted as the final threshold in the documentary (45:16). The documentary suggests that not all thresholds have been crossed to the same extent and emphasizes that these thresholds can be corrected through scientific research and sound policies. To restore balance to the Earth, it is essential to follow science and implement related actions. The documentary focuses on three key areas: first, biomes (rainforests, temperate forests, taiga forests, grasslands); second, the conservation of biodiversity; and third, the circulation of water on Earth (20:05). By focusing on these three points from a scientific perspective, the documentary presents the idea that the Earth can regain its natural balance.

The documentary emphasizes that in order for the Earth to regain its natural balance, carbon emissions must be reduced, and there should be a greater focus on renewable energy sources. It also suggests that adopting a semi-vegetarian diet can help increase biodiversity, and that recycling can aid in resource conservation (1:02:53). The salvation of the world is seen as dependent on humanity and science. Throughout the documentary, there is a recurring message that with the advancement of science, the destroyed natural world can be “revived through the power of science.” This anthropocentric perspective dominates the entire narrative, from the beginning to the end of the film. It is suggested that when humanity uses science “correctly,” it can resolve the problems it has caused to the Earth.

The analogy in the documentary compares driving through a mountainous area on a winding road with the risks of falling, where the car’s engine is running at full power, and you’re driving without headlights. Naturally, you would want to turn on the headlights to see the dangers ahead. This is similar to what science tries to do: providing us with the headlights to spot the risks. The recent discoveries made by scientists to understand our planet are crucial for all of us. While the findings may be alarming, they also offer hope, as they show us how we can correct the issues at hand (0:15-1:05).

As stated in the excerpt above, the importance of science and scientists is emphasized through the analogy that living on Earth is comparable to traveling on a dark road. In this analogy, the only way to see ahead and continue on the path is through science and scientific knowledge.

Thanks to scientists like Johan Rockström, we now have the capacity to act with a unified purpose, functioning like the consciousness and brain of our planet. We can ensure that our planet remains healthy and resilient forever, creating a perfect home (1:11:02-1:11:17)

In this excerpt, humanity's arrogant perspective becomes even more pronounced. It suggests that the world cannot exist independently of humanity, and that the brain and consciousness of the planet will once again be human beings. The idea of "intervening in the world's order through science" is clearly reflected in the above excerpt. The documentary employs a language that aligns with the ecosystem discourse.

3.2. Arcadian Discourse

The Arcadian discourse presents an expression that creates a distance between society and nature, externalizing it. It emphasizes the magnificence, beauty, and superiority of nature, while highlighting how humanity remains insignificant in comparison. In the Arcadian discourse, nature is paramount. Humans are merely a part of that nature. The idea that human happiness can only be attained through a return to nature prevails (Hannigan, 2006).

This is because nature possesses a creative structure far beyond the power that humanity can create (Giddens, 2000). In this article, the documentaries *David Attenborough: A Life on Our Planet* and *Bubble: The Wonders of the Reef*, in which the Arcadian discourse predominates, will be analyzed.

David Attenborough: A Life on Our Planet, 2020⁴

David Attenborough is a prominent figure dedicated to the conservation of nature. In this documentary, he uses his own life experiences and references the past to provide insights into the current state of biodiversity. He emphasizes the miraculous aspects of nature, pointing out how humanity has disrupted it. At the very beginning of the documentary, captivating nature scenes are presented in slow motion, highlighting the aesthetic beauty of the natural world. Vibrantly colored birds diving into the water are prominently featured, symbolically representing the meeting and integration of the sky and the underwater world.

The living world is a unique and magnificent miracle. Millions of plant and animal species, dazzling with their variety and richness, and billions of individuals coexist on this magnificent planet... They lead intertwined lives, sustaining each other's existence (2:40-3:25).

In addition to viewing the world as unique and miraculous, the documentary emphasizes that humanity's existence is interdependent with other living beings. Throughout the film, it is highlighted that human life is built upon a delicate balance, and this balance can only be maintained through the preservation of biodiversity (3:25-3:29).

The emphasis is placed on nature's creative and protective qualities. Nature is conceived as a living entity. The sentence "Over billions of years, nature has created miraculous forms, each more complex and successful than the last" (8:11) describes nature with creative and miraculous attributes. It is stated that nature continuously progresses, and it is also emphasized that nature improves itself over time.

The documentary, while describing the mesmerizing qualities of nature, conveys that the human factor has not contributed to its development; rather, nature is self-sufficient. It is stated that nature has established its own system, and this system is perfect and unique.

In the Holocene, biodiversity helped maintain stability. All living beings met in a sensitive and harmonious rhythm; the seasons. In tropical plains, dry and rainy seasons would

change like clockwork every year. In Asia, winds would create the monsoon on time. In the northern regions, temperatures would rise in March to trigger spring, and remain high until October, when they would drop and bring autumn. The Holocene was our garden of paradise. The rhythm of the seasons was so reliable that it provided our species with a unique opportunity (12:01)

As seen here, nature is described as a flawlessly functioning clock. Its miracle is emphasized as being inherent within itself. Everything happens exactly when it is supposed to, as it should. Amid all this magnificence, nature offers humanity an opportunity. The idea that humanity is in a position to seize the opportunity provided by nature is highlighted. According to this perspective, nature is seen as a superior force that offers opportunities to humankind. Elements of the Arkadian discourse are frequently emphasized throughout the documentary. In the end, the message is clearly conveyed: “We must move beyond being separate from nature and rediscover being a part of it” (1:12:35). This encapsulates the core message of the documentary.

Puff: Wonders of the Reef, 2021⁵

Directed by Nick Robinson and narrated by Rose Byrne, the documentary *Puff: Wonders of the Reef* explores marine life and the tremendous impact that reefs have on both their immediate environment and the planet as a whole, all through the journey of a juvenile pufferfish. The documentary’s descriptive summary reads: “A baby pufferfish searching for a home on the Great Barrier Reef embarks on a journey through a fantastic micro-world filled with amazing creatures.” In the documentary, the world of reefs, one of the most important elements of life in the oceans, is examined on a micro level. While the magnificence of the world on a macro scale is often highlighted, the documentary emphasizes the incredible complexity of the world on a micro scale as well.

This is Bubble’s world. A vibrant coral reef, home to thousands of creatures. But to see what Bubble sees, you have to look closely. Even closer. Because every coral reef’s story begins with the smallest of creatures. We’ve just unlocked the door to their incredible micro-universes. A world where events happen too small, too fast, or too slow for the human eye to grasp. From Bubble’s perspective, it must be a captivating sight. (1:49).

The idea that this microstructure also affects the world on a macro level is highlighted in the documentary. It emphasizes that the lives of thousands of creatures are interconnected with this structure.

Without these small creatures, which convert the energy collected by corals, there would be nothing for the larger creatures to eat. Life in the reef is dependent on the cooperation of thousands of creatures, each playing a vital role (19:27-20:00).

In the documentary, although the pufferfish is the main subject, the lives of many different creatures are frequently shown. It is expressed both visually and verbally that thousands of creatures live together with the pufferfish in the same region, creating a magnificent system in accordance with the Arcadian discourse. Camera focuses on very small points within the sea are supported by broader shots of the overall view of the ocean from above. It is emphasized that this region constitutes a vast universe in itself. “Lagoon is an intertwined world of cosmos. The closer you look, the more you find” (35:46). In line with the Arcadian discourse, which emphasizes the awe-inspiring life nature offers to every living being, the documentary shows that the reef is the ideal habitat for the pufferfish and other creatures. Even though it may be difficult for humans to see with the naked eye,

it is conveyed that there is a fascinating living space at the micro level. The ideal living conditions for sustaining life are found within nature.

The vastness of the sand flats is highlighted, suggesting that although they may not be large enough in a general sense, they are still quite long for a baby fish. There are no places to hide or much food available here. Just when the sand seems to stretch into infinity, a mirage appears on the horizon. A labyrinth of mangrove roots, pockets full of food, passages, and a lower risk of being eaten. This is the perfect place for a fish the size of a thumbnail to perfect the skills necessary for feeding, growing, and surviving (29:53).

The documentary conveys several messages that align with the Arcadian discourse. A central theme is the idea that nature can exist independently and without human intervention. In areas where human interference is minimal or absent, even on a micro level, there is an awe-inspiring and remarkable form of life. According to the documentary, marine reefs harbor many surprises waiting to be discovered, and these reefs possess extraordinary structures and systems.

3.3. Environmental Justice Discourse

The foundation of the environmental justice discourse lies in the inequities arising from socio-economic conditions, which lead to insufficient access to civil rights, environmental pollution, public health issues, waste distribution, and unhealthy working conditions in homes, schools, and workplaces. These inequities also manifest in other areas of injustice (Bullard & Johnson, 2009). The concept of environmental justice began to be used occasionally from the 1960s onwards. However, it gained significant importance during the 1980s. Unlike the other two discourses analyzed, environmental justice emphasizes the idea that environmental problems are not equally distributed and that there is an inherent injustice.

According to environmental justice discourse, the environmental issues created disproportionately affect individuals at lower socio-economic levels, playing a larger role in their lives (Hannigan, 2006). The transformation of the environment into a consumable object creates an unjust environment (Giddens, 2012), and today, the prevention of environmental problems is directly connected to one's level of prosperity (Giddens, 2000). This article will analyze the documentaries *Brave Blue World* and *Youth Climate Lawsuit* from the perspective of the unequal distribution of environmental problems.

Blue Brave World, 2020⁶

The documentary *Brave Blue World*, directed by Tim Neeves and Alexander Whittle, addresses the global water crisis, its consequences, and potential solutions. The opening segment emphasizes that the water crisis is not limited to specific geographical areas. It is shown that, just as the crisis is evident in developing countries, it also exists at varying scales in developed countries. While the documentary discusses how the water crisis impacts the world today, it also stresses the likelihood of it intensifying in the future. However, the narrative also suggests that scientific approaches can provide solutions to these problems. While the idea that the water crisis can be mitigated through scientific methods and that sustainable water consumption is achievable seems aligned with the ecosystem discourse, when considering the countries experiencing these crises and the scale of the problems, a direct connection to environmental justice discourse can be established.

Global army of visionaries and inventors who are working to redesign and recreate water systems to produce, supply, and purify water that is essential for everyone. Three key water-related challenges that the world must address: first, the scarcity of water; second, the need to build climate-resilient infrastructure; and third, making all of this affordable (2:32-2:59)

As seen in the excerpt above, expressions such as “a legion of visionaries and inventors working”, “redesigning water systems” and “trying to achieve all of this at an affordable cost” aim for sustainable water consumption. These statements align directly with the scientific approach of the ecosystem discourse. However, as the documentary delves deeper into the differences between regions facing water issues and the disparities in the scale of these problems, the ecosystem discourse gives way to the environmental justice discourse. This shift highlights the inequality in how environmental issues, such as the water crisis, are distributed and felt, particularly in socioeconomically disadvantaged regions.

In the sections discussing water issues in developed countries, the cities of Chicago in the United States and Andalusia in Spain are used as examples. While water scarcity and sanitation issues are highlighted in these regions, the emphasis is placed more on potential future problems rather than current issues. Considering the population density and water transport/consumption capacities of these cities, it is suggested that water issues will arise in the future with increasing populations. However, when developing countries are used as examples, the situation becomes much more serious. The water problems in these countries are not future problems but rather issues that directly affect the present. These problems are not merely obstacles to a high quality of life but rather challenges that hinder survival. Actor Matt Damon shares an anecdote from his experience working on water well projects in Zambia in the documentary:

In 2019, one million children under the age of five died due to the lack of access to clean water and sanitation. I first understood the severity of this problem when I went to fetch water. I was in a rural village in Zambia, and there was a 14-year-old girl with me. She took one jug, I took another, and together with a translator, we set off. After walking for about two kilometers, we arrived at a borehole. I asked her, “What do you want to be when you grow up? Will you stay in this village?” She looked at me and said, “No, I won’t stay here. I’m going to the big city, Lusaka, to become a nurse.” I thought of myself at 14, imagining going to New York to become an actor, and I suddenly remembered that feeling. After getting in the car, it hit me—without the foresight of the person who drilled that well two kilometers away from this girl’s home, she would have never been able to imagine such a future. She would have spent her whole day not in school, but carrying water from the river (10:19-11:30).

As mentioned in Damon’s anecdote, the water issue in Zambia is significantly different from the problems in Chicago and Andalusia. In large, developed cities, the water problem is more forward-looking, whereas in Zambia, the issue directly concerns the survival of children. This problem is one that could force the local population to migrate from their homes starting from childhood. Additionally, the fact that the water well was drilled by others is noteworthy. The local budget in that area cannot even support the drilling of a well, so the community is reliant on others for access to drinking water. They obtain their drinking water from wells located two kilometers away, using buckets. Focusing on the last sentence of the quote, it is suggested that due to the water crisis, children cannot

even go to school, and thus, they have no chance of securing a good future. While the “future-oriented” water problems in big cities are about planning ahead, in Zambia, it has become a matter of survival and the destruction of any possibility for a better future.

Kenya faces a problem similar to that of Zambia. In the documentary, it is evident that Kenya also suffers from water and sanitation issues as severe as those in Zambia. The documentary features speeches from Dixon Ochieng Otiento, who was born in Kenya and has been seeking solutions to the water crisis there since his childhood.

I grew up in the slums. If you grow up in the slums, you struggle with sanitation issues every day. Every night before going to bed and every morning when I woke up, I asked myself, how can we provide a different life for my brother, sister, cousin, and everyone suffering from sanitation problems?” Dixon’s company is providing a local solution to a global issue. In Kenya, it supplies a sustainable toilet and waste treatment system to 20,000 people economically (14:59-15:30).

Dixon has spent his life striving to solve the problems he experienced. Since his childhood, he has worked to ensure that others do not have to endure the same issues he faced. The solution to Kenya’s sanitation problem comes from the hands of a child who grew up in that very region.

The example of environmental injustice most clearly highlighted in the documentary is the case of India. India is a society where social inequalities are particularly pronounced. The documentary provides an example based on this issue. In 2019, Chennai, one of the largest cities in India, faced a severe water crisis. The city completely depleted its drinking water reserves and reached a zero point. The drinking water needs were met by bringing water tankers from other locations. However, when the water tankers went on strike for 4-5 days, the city’s water crisis intensified, and a large portion of the city completely ran out of water. However, a 200-house residential complex within the city had not faced such a problem. This complex had its own water treatment plant. It had a water system that purified rainwater and used water, making it reusable. While the entire city was suffering from the water shortage, the complex was able to maintain its lush green garden. The residents of the complex explained this by claiming their awareness. However, as shown in the documentary, the issue is purely economic. The site where some of the wealthiest people in the city live is located on the outskirts. While the images of the city show narrow streets and tightly packed houses, this residential complex stands apart and looks out over the city from a distance. From the balcony of the complex, vast green gardens and the cityscape are visible. One resident of the complex says, “I look out the window and wonder if the other complexes have the same system. If they did, this problem would be solved” (40:00-40:13). This statement clearly illustrates environmental injustice. The issue faced by millions of people, who cannot even access drinking water, is attributed to their lack of water treatment devices. The documentary is built on the idea that water issues can exist in every region, but they are not experienced with the same intensity everywhere. In this regard, the documentary delivers a message in line with the environmental justice discourse by showing that water problems are not equally distributed across all social classes.

Youth V Gov, 2020⁷

The documentary *Youth v Gov*, directed by Christi Cooper, follows the legal battle of 21 children and young adults, aged between 11 and 22, who are suing the U.S. government.

The plaintiffs argue that rather than taking action to prevent global warming, the U.S. government has been enacting policies that exacerbate it. These children believe that the main cause of global warming is the government's policies and view the situation as an assault on their right to life. Therefore, they have filed a lawsuit claiming that their constitutional right to life has been willfully violated by the U.S. government. The central issue of this case is the government's subsidies for fossil fuels, which are believed to intentionally support the acceleration of global warming. The documentary outlines the legal process and what happened afterward.

The reason the documentary focuses on this lawsuit is that it represents the first case where global warming is viewed as a constitutional violation. Despite the fact that scientists have been presenting environmental reports on global warming to the U.S. government since the 1960s, no adequate measures have been implemented. This lack of action has been interpreted as a constitutional violation. Global warming has caused different consequences across U.S. states, with the documentary showcasing various natural disasters that align with the principles of environmental justice. The occurrences of floods and storms in Louisiana (16:14), the increasing frequency of once-in-500-year hurricanes (17:18), the rise in frequency and uncontrollability of wildfires in Oregon (18:18), and the extension of wildfire durations from 23 days in the 1970s to 120 days today (18:32), along with severe droughts in the Navajo region affecting agriculture and causing livestock deaths (18:59), are directly tied to the climate crisis. As these examples show, the climate crisis impacts each region differently. Natural disasters are not distributed equally, either regionally or economically.

As repeatedly emphasized in the documentary, the plaintiffs, the children, are actually seeking to claim their rights. The fact that their governments support the climate crisis for their own interests and expose their populations to poor living conditions has led these individuals to pursue their rights through legal action. The continuation of the climate crisis through government collaboration with large corporations has sparked a reaction. One of the plaintiff children stated the following:

I have always thought of this case as follows: 'Wow, this is democracy. Even if our president ignores us, even if Congress works against us, the courts are ours, and we will seek justice there.'" (20:13-20:27)

As can be seen in the quote, it is stated that the lawsuit was filed in order to somehow resolve the injustice at hand. Another significant factor that influenced the filing of the lawsuit is the shift in the rhetoric of presidential candidates regarding solving the climate crisis. Before being elected, presidential candidates, other than Donald Trump, made statements acknowledging the climate crisis and committing to transitioning to green energy to address it. However, after being elected, they promoted the opening of oil drilling wells as a success, pushing green energy policies to the background. For instance, before becoming president, Barack Obama spoke about oil companies as follows:

We have been subsidizing oil companies for a century. This is enough. It is time to stop wasting public taxes and to support the promising clean energy sector even more." (27:00-27:18)

These statements led to the belief that Obama would support green energy more. However, his speech after being elected president in Oklahoma contains the exact opposite of this statement.

Hello, Oklahoma! Under my administration, America is currently at its highest level of oil production in the last eight years. Over the past three years, we have opened millions of acres of land in twenty-three different states for gas and oil exploration. We set a record by quadrupling the number of oil platforms. We laid enough pipelines to circle the globe. We are drilling everywhere.” (27:21-27:50)

Despite knowing what the major oil companies are actually doing, Obama has implemented policies that would allow them to further harm the environment. The idea that the environmental damage caused to the world can be overlooked in the pursuit of economic interests is at the forefront here. However:

Meanwhile, Jayden and his family were falling ill one by one due to the polluted floodwaters that had overtaken their home, while the Obama administration was busy making new bids for drilling in the Gulf of Mexico. By the end of the second term, filing this lawsuit had become inevitable.” (28:20-28:39)

The documentary emphasizes the idea that politicians have not been attempting to solve the climate crisis through their words and actions. Therefore, the lawsuit is presented as the only solution. Between 1:04:00 and 1:06:30, there is a crucial courtroom scene in the documentary. In this scene, the court will decide whether the case can proceed. The lawsuit was filed with the claim that the climate crisis, which restricts the fundamental rights of children and young people, was created by the government. The government lawyers argued that the evidence presented was clearly worthless and that the children filing the lawsuit were ignorant of the issue and did not understand what they were talking about. The court, however, stated that constitutional rights had been raised for the first time in an effort to stop global warming. The children’s lawyer began by pointing out that the defendants also acknowledged the global climate crisis. The lawyer emphasized that the main issue was that the federal defendants, acting together and through the fossil fuel energy system, deprived these young people of their rights to life, liberty, and property. The judge remarked that everyone was affected by this crisis. The lawyer responded by stating that children are disproportionately affected by climate change and that this situation will continue. They also added that children would live longer than the judges, and thus, would be exposed to the climate crisis for a longer period. The lawyer emphasized that children would be more affected by these issues than the rest of the country. As seen in this scene, while the judge acknowledges that this crisis affects everyone, the lawyer argues that although the issue affects everyone, it is more intense for some. Additionally, the fact that this situation has been created intentionally and collectively aligns perfectly with the environmental justice narrative.

As the documentary reaches its conclusion, the court ruled that this case could not be resolved by the judiciary and decided to dismiss the lawsuit. It was argued that the types of policies implemented by the government could not be remedied by the judiciary, leading to the conclusion that the climate crisis was not a judicial matter. However, the extensive attention given to this case has encouraged similar social movements worldwide. This lawsuit has led to an increase in awareness of the climate crisis and the louder voices of protest. The documentary, in line with the environmental justice narrative, addressed the theme that while the problem is global and affects everyone, it is felt more intensely by certain groups. Although the issue seems unstoppable and global, it can also be understood as a solvable problem and perceived as a local issue. The topics presented in

Youth Climate Lawsuit have been portrayed in accordance with the environmental justice narrative.

Conclusion

The aim of this article is to analyze seven environmental documentaries available on Netflix, the world's most-watched internet platform, through the lens of environmental discourses. These documentaries include *Cowspiracy: The Sustainability Secret*, *Kiss the Ground*, *Breaking Boundaries: The Science of Our Planet*, *David Attenborough: A Life on Our Planet*, *The Bubble: Wonders of the Reef*, *A Brave Blue World*, and *Youth Climate Lawsuit*. The first section of the article explains the topic and significance of this research. Given the increasing interest in environmental issues, there is a need for studies in this field, which is why this topic has been selected. The second part of the article reviews and examines the existing literature. It has been observed that environmental literature in the field of sociology is still relatively new. The third section provides information about the perspective, methodology, and limitations of the study. The article is approached from a critical social science perspective. Discourse analysis has been applied, and the article is limited to seven environmental documentaries. In the fourth section of the article, the environmental discourses in the documentaries were identified and presented.

Three different types of discourses—Ecosystem discourse, Arcadian discourse, and Environmental Justice discourse—have been used in the environmental documentaries. The documentaries where Ecosystem discourse is dominant are *Cowspiracy: The Sustainability Secret*, *Kiss the Ground*, and *Breaking Boundaries: The Science of Our Planet*. The documentaries in which Arcadian discourse is predominantly used are *David Attenborough: A Life on Our Planet* and *The Bubble: Wonders of the Reef*, while the documentaries that frequently use Environmental Justice discourse are *A Brave Blue World* and *Youth Climate Lawsuit*.

In the documentary *Cowspiracy: The Sustainability Secret*, emphasis is placed on the idea that the livestock industry is a major cause of many environmental issues worldwide. The domestication of wildlife and turning animals into consumable goods has led to environmental problems. After scientific analyses of this situation, a solution is proposed, suggesting that environmental issues can be addressed through sustainable ways of life. In *Kiss the Ground*, the documentary highlights the idea that agricultural practices around the world lead to the inefficient use of soil and environmental degradation. The inefficient and unscientific use of soil is damaging life on Earth. The primary cause of this is humanity itself. However, as pointed out in the documentary, the solution comes again from humanity and science. By implementing scientific methods and efficient agricultural policies, the damage done to the environment can be reversed, and a sustainable world can be created. The final documentary in which Ecosystem discourse is predominantly featured, *Breaking Boundaries: The Science of Our Planet*, discusses how humanity has harmed the environment and how critical thresholds have already been surpassed, which threaten the Earth's ability to sustain life. The documentary emphasizes that since the Industrial Revolution, humanity has won a great victory over nature, but this victory is now turning against humanity. However, the documentary concludes that, with the guidance of science, the right policies can be applied, and the world can once again become livable and sustainable. As seen, documentaries with a focus on Ecosystem discourse emphasize that the root of environmental problems stems from human actions. They also assert that the solutions to these problems will come from humanity itself.

The first documentary with a predominant Arcadian discourse, *David Attenborough: A Life on Our Planet*, emphasizes the magnificence and uniqueness of the Earth. The documentary, both visually and verbally, underscores that the Earth has a marvelous system of its own and attempts to convey the idea that humanity must adapt to this magnificence. It is suggested that humanity can only find happiness in harmony with nature. The second documentary with a focus on Arcadian discourse, *The Bubble: Wonders of the Reef*, explores the idea that the world is filled with miracles on a micro scale. In this documentary, whose main character is a pufferfish, the notion is presented that the world is not only fascinating on a macro scale but also contains thousands of universes on a micro scale, hosting a mesmerizing system. These two documentaries that incorporate Arcadian discourse illustrate that nature is captivating both on a macro and micro scale and can sustain its own system independently of humanity.

The documentaries *A Brave Blue World* and *Youth Climate Lawsuit*, analyzed from the perspective of Environmental Justice discourse, are built upon the idea that significant environmental issues are not equally distributed across the world. In other words, the documentary *A Brave Blue World*, which addresses water issues from an Environmental Justice perspective, highlights that while water scarcity is experienced on a global scale, it has a direct impact on human life, especially in African countries. While water issues in developed countries are perceived as a future concern, in underdeveloped countries, particularly in Africa, water scarcity threatens human life directly. As clearly demonstrated in the example of India, water scarcity in a city affects the poor, while the quality of life of the wealthy remains unaffected. The documentary *Youth Climate Lawsuit* is based on the idea that the global climate crisis affects specific regions and age groups more intensely. While global issues may seem universal, they actually affect people from different economic and social categories in diverse ways.

Popular environmental-themed documentaries on the Netflix platform have been analyzed according to different discourse categories. While each documentary could be included in different categories with some examples, their core messages are predominantly distinct. Therefore, each documentary has been categorized based on the type of message it aims to convey, falling under the Ecosystem, Arcadian, and Environmental Justice discourses. Each documentary has approached environmental issues from different perspectives, offering varied approaches. While conducting this study, it was assumed that different types of discourse directly influence the messages conveyed in the documentaries. Each discourse type was considered to shape the main theme, messages, and presentation style of the documentary within the framework of different environmental discourses. Therefore, this study examined the varying impacts of each discourse type on different documentaries. Future research could explore different digital platforms, analyze various discourse types, and examine a broader range of documentaries. This study concludes that different environmental discourses have a direct impact on the messages conveyed in documentaries.

In conclusion, environmental-themed documentaries and films can be effective in determining societal interests. In particular, the increased interest in environmental awareness has led the media to present more content on these topics (Tandoc & Eng, 2016). The documentaries analyzed here aim to create behavioral change in individuals through the messages they convey. By presenting potential solutions at the end of the documentaries, examples are given on what can be done to change the world. Moreover, environmental-themed documentaries are also influential in shifting mentalities (Ali &

Baştürk, 2022). This transformation supports the approach of analyzing documentaries from a critical social science perspective. However, the issue of environmental concerns not receiving adequate attention persists (Özdemir, 2015). Despite this, research on environmental discourses is increasing. Comparative analyses show that environmental issues are addressed under different themes in films and documentaries. For instance, Ryan, Hanan, and Imanjaya discussed how the content of *An Inconvenient Truth* and *Blackfish* affects the topic being presented (Ryan et al., 2023). Eryılmaz, through film analyses within the frameworks of Arcadian, Ecosystem, and Environmental Justice discourses, demonstrated how messages in films are reflected through different perspectives (Eryılmaz, 2017a). Zhang, Sandaran, and Feng conducted a discourse analysis on how environmental topics are treated in the U.S. and Chinese versions of CNN. This study revealed that the same channel presents different perspectives on environmental issues in different countries (Zhang et al., 2023). Another study comparing the discourse analysis of two different newspapers showed that the same news can be presented in different ways (Ahchong & Dodds, 2012). In a different study, Schafer and Schlichting examined the media's portrayal of climate change (Schäfer & Schlichting, 2014). In this paper, similar findings to those in the literature were observed. The results demonstrate that environmental topics are presented from various perspectives in different ways to the audience. Similarly, in the seven documentaries we analyzed through the frameworks of Ecosystem discourse, Arcadian discourse, and Environmental Justice discourse, similar conclusions were reached. The documentaries we analyzed highlighted the importance of environmental issues, approached environmental problems from different viewpoints, and conveyed important messages to raise environmental awareness in individuals.

Notlar

- 1 Director: Kip Andersen, Keegan Kuhn. Actors: Bruce Hamilton, Kip Anderson, Al Gore. Time: 130 m. <https://www.imdb.com/title/tt3302820/>. (01.06.2023).
- 2 Director: Joshua Tickell, Rebecca Harrell Tickell. Actors: Woody Harrelson, Ray Archuleta, John Wick. Time: 84 m. <https://www.imdb.com/title/tt8618654/>. (01.06.2023)
- 3 Director: Jonathan Clay, Actors: David Attenborough, Elena Bennett, Jason Box. Time: 73 m. <https://www.imdb.com/title/tt14539726/>. 22.08.2024.
- 4 Director: Alastair Fothergill, Jonathan Hughes, Keith Scholey. Actors: David Attenborough, Max Hughes. Time: 83 m. <https://www.imdb.com/title/tt11989890/>. (01.06.2023)
- 5 Director: Nick Robinson. Actors: Rose Bryne. Time: 62 m. <https://www.imdb.com/title/tt15753666/>. (22.08.2024).
- 6 Director: Tim Neeves ve Alexander Whittle. Actors: Liam Neeson, Matt Damon, Jaden Smith. Time: 50 m. <https://www.imdb.com/title/tt11921004/>. 23.08.2024.
- 7 Director: Christi Cooper. Actors: James Hansen, Julia Olson. Time: 110 m. <https://www.imdb.com/title/tt13192640/>. 25.08.2024.

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Analysis of Environmental Documentaries on Netflix in Terms of Environmental Discourses

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Extended Abstract

The purpose of this article is to examine environmental-themed documentaries available on the Netflix platform in terms of environmental discourses. In this study, discourse analysis was employed in accordance with the critical social science approach. Discourse analysis is a method that reveals not only the direct messages conveyed by texts but also what lies behind the narratives. Messages not explicitly stated within the text can be uncovered through discourse analysis. This method allows for the visibility of discourses within the text. Therefore, seven documentaries were analyzed using this method, and the discourses within them were revealed. According to this analysis, three main discourses were identified: the Ecosystem discourse, which emphasizes humanity's struggle with nature, portraying it as harmful to both nature and humanity, believing that the damage done to nature can be corrected by human intervention, and highlighting the power of science and human agency in the nature-human conflict; the Arcadian discourse, where nature is idealized and humans are depicted negatively in their struggle against it, emphasizing nature's superiority over human creations; and the Environmental Justice discourse, which focuses on how the negative effects of environmental issues vary according to socio-economic status, highlighting that not everyone is equally affected by the same environmental problems and stressing the importance of socio-economic power in the creation of environmental issues. The documentary *Cowspiracy: The Sustainability Secret*, which predominantly reflects the Ecosystem discourse, emphasizes that organizations claiming to protect nature based on scientific data often ignore these data and create simple issues for themselves without focusing on the core problem. It is argued that these organizations, in their working principles, aim to keep the environmental issue alive rather than addressing its root causes. The documentary suggests that efforts to tackle environmental problems often come before attempts to solve them, highlighting the ongoing work to ensure environmental issues persist. In the second documentary, *Kiss the Ground*, the focus is on humanity's dual role in both destroying the environment and finding solutions to environmental problems. This documentary, which leans heavily on the Ecosystem discourse, presents the idea that the relationship between humans and the land can be corrected through scientific methods, which can increase productivity. The notion that the core issue is scientific development rather than a mental transformation is critically examined. The third documentary analyzed in this article, *Our Planet's Critical Thresholds*, states that our planet has already surpassed critical thresholds and discusses potential solutions. It observes that some thresholds that the Earth should not exceed have already been crossed due to human actions. Factors such as carbon emissions, deforestation, and pollution are identified as pushing the planet's limits and surpassing critical thresholds over time. The exceeding of these thresholds is said to negatively affect both human and other life forms. However, the documentary also conveys the message that it is not too late to make improvements through the right actions. In the fourth documentary, *David Attenborough: A Life on Our Planet*, the Arcadian discourse is present. This documentary emphasizes that the Earth can sustain itself independently of humanity and can create unique miracles. According to the documentary, the Earth

operates perfectly within its cyclical structure, and humans are just one of the many life forms living on it. The documentary argues that what is important is for humans to adapt well to this perfect process. The fifth documentary, *Bubble: Wonders of the Reef*, emphasizes the perfection of the Earth's system on a micro level. The documentary, told through the story of a tiny pufferfish, illustrates how the functioning of the world is part of a perfect cycle. The story of the pufferfish in this documentary reflects how the underwater world affects everything from micro to macro levels, and the fish is portrayed as a harmonious part of this perfectly functioning system. The sixth documentary, *Brave Blue World*, follows the Environmental Justice discourse. It highlights how the global water crisis varies according to socio-economic status. Although the limited availability of water resources is a global issue, it does not affect everyone equally. In this documentary, the central issue is how water scarcity differs based on socio-economic status. Access to water in poor countries and neighborhoods is a critical issue that threatens human lives, while in wealthy neighborhoods, the opposite occurs. Wealth positively impacts access to water resources and clean water. Socio-economic status differences can also contribute to the fragmentation of society, and this is discussed in the context of water access. The seventh and final documentary, *Youth vs. Climate Crisis*, focuses on how the global climate crisis affects different regions and age groups to varying degrees. The documentary highlights that while global warming impacts the entire world, it affects some countries and groups more than others. For example, the negative effects of global warming are more visible in developing countries, while developed countries have created an illusion of being unaffected by adopting different solutions. The main theme of the documentary is the idea that the younger generation will be the most affected by global warming and that this issue will impact their lives for a longer period. Developed countries are accused of "stealing" the future of young people through policies that exacerbate global warming. The main focus of this documentary is the lawsuit filed by young people against the United States and the awareness it raised. In conclusion, the documentaries analyzed in this article focus on different perspectives of environmental discourse, view environmental problems and proposed solutions from various angles, and generate distinct discourses on these issues.

Keywords: Environmental Sociology, Ecosystem Discourse, Arcadian Discourse, Environmental Justice Discourse, Documentary, Netflix.

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Research Article | Araştırma Makalesi

An Analysis of the The Age of Stupid Documentary in the Context of Environmental Communication Çevresel İletişim Bağlamında Aptallık Çağı Belgeselinin Analizi

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Abstract

In the post-1980 period, when industrialization accelerated, the studies in the field of environmental communication gained importance in order to raise awareness with the increase in environmental degradation. Increasing this awareness, the widespread use of mass media with developing technology has been effective. The Age of Stupid is one of the important films in terms of the creation of environmental awareness. Within the scope of this article, the film was examined with qualitative content analysis. In the findings section, 6 real story and archive videos shown in the film are examined through three environmental discourse. These are ecosystem discourse, environmental justice discourse and ecosocialism. It is emphasized that nature, which is deteriorated by the human hand emphasized until the end of the film, reached a dangerous dimension in 2055 due to climate change and global warming. As a result, it has been shown that rich companies and states that have power in The Age of Stupid will be faced with a humanity and nature that will disappear if they continue to exploit nature and poor countries without taking any precautions.

Keywords: Environmental communication, Qualitative content analysis, Ecosystem discourse, Environmental justice discourse, Ecosocialism.

Öz

Endüstrileşmenin hız kazandığı 1980 sonrası dönemde, çevre iletişimi alanındaki çalışmalar, çevresel tahribatin artmasıyla farkındalık oluşturmak amacıyla önem kazanmıştır. Bu farkındalığın artmasında, gelişen teknoloji ile kitle iletişim araçları kullanımının yaygınlaşması etkili olmuştur. Aptallık Çağı belgeseli, çevresel farkındalığın oluşturulması açısından önemli filmler arasında yer almaktadır. Bu makale kapsamında film, nitel içerik analiziyle incelenmiştir. Bulgular bölümünde, filmde gösterilen 6 gerçek hikâye ve arşiv videoları, üç çevresel söylem üzerinden incelenmiştir. Bunlar, ekosistem söylemi, çevresel adalet söylemi ve ekososyalizmdir. Filmin sonuna kadar vurgulanan insan eliyle bozulan doğanın, iklim değişikliği ve küresel ısınma nedeniyle 2055 yılında hiçbir canlı bırakmayacak şekilde tehlikeli bir boyuta ulaştığı ön plana çıkarılmaktadır. Sonuç olarak, Aptallık Çağı filminde elinde gücü bulunduran zengin şirketlerin ve devletlerin, herhangi bir önlem almadan doğayı ve yoksul ülkeleri sömürüye devam etmeleri durumunda yok olacak bir insanlık ve doğayla karşı karşıya kalınacağı gösterilmektedir.

Anahtar Kelimeler: Çevresel iletişim, Nitel içerik analizi, Ekosistem söylemi, Çevresel adalet söylemi, Ekososyalizm.



Introduction

In contemporary times, phenomena such as rapid technological advancements and increased industrialization have contributed to the escalation of environmental issues. While topics related to the environment and nature did not hold significant societal importance until the 1970s, especially with the acceleration of industrialization and its detrimental effects on the environment, awareness began to grow. Particularly through media channels such as films, documentaries, books, magazines, and newspapers, individuals and societies have become more conscious of environmental issues. The documentary *The Age of Stupid*, directed by Franny Armstrong and released in 2009, examines six different real-life stories. The protagonist, an unnamed archivist and the last person on Earth, uses authentic video footage recorded between 1950 and 2008 to emphasize that everything has been in plain sight, yet has been consistently ignored. The documentary highlights significant issues such as the reckless and unsustainable use of petroleum and natural gas reserves, particularly in the transportation industry, without considering future generations, as well as addressing global concerns like climate change and global warming. In addition to the real-life narratives, the film also incorporates animated sequences that provide crucial scientific information.

The aim of this study is to analyze the 2009 documentary *The Age of Stupid* through an environmental discourse lens, in order to raise awareness of environmental problems and show what kind of world we might face by 2055 if no preventive measures are taken. The literature section of the study outlines key concepts related to the environment, environmental sociology, environmental communication, and environmental movements. The methodology section explains the qualitative content analysis employed in the study and provides information about the film. In the findings section, environmental discourse themes such as ecosystems, environmental justice, and ecosocialism are identified through a detailed analysis of the film. Both direct and indirect narratives support these environmental discourses. The final section offers a comprehensive evaluation of the findings.

1. Literature

The environment is defined as “everything outside of the individual or group that stimulates and influences their behavior” (Kızılcelik & Erjem, 1996). Humanity’s domination over nature has led to the loss of the natural integrity of the environment (Giddens, 2009). In this regard, as Giddens also points out, “environmental issues, often arising from human actions, can never be entirely natural” (Giddens & Sutton, 2020). Therefore, the tendency of modern humans to disregard nature is based on the assumption that natural resources are unlimited (Çankal & Alkın, 2024). However, environmental issues arising from the reciprocal relationship between the environment and society are becoming more prominent in areas such as oil usage, air pollution, genetically modified foods, and global warming (Giddens & Sutton, 2020). In order to ensure the sustainable transfer of natural resources to future generations, the consumption patterns adopted by individuals must be shaped by an ecological mindset that minimizes environmental harm. The ecological approach refers to a perspective that emphasizes sustainability in the production and reproduction processes within the natural flow of life (Tekeli & Ataöv, 2017). At this point, it is essential to examine the environmental problems caused by rapid population growth and excessive consumption in a comprehensive manner.

It is argued that the most significant threat to ecological sustainability is rapid population growth. The environmental damage caused by population is claimed to stem from consumption patterns. In this context, environmental degradation is driven by both rapid population growth and the subsequent increase in consumption. In today's world, products used can be sourced either from nearby regions or from distant areas, which results in the consumption of resources from regions where these products are not produced. This phenomenon exacerbates the vulnerability of these regions (Tekeli & Ataöv, 2017). The vulnerability that emerges has become a critical issue for societies. Moreover, it leads to the emergence of complex, interrelated problems, influenced by multiple factors.

On the other hand, climate, the greenhouse effect, and global warming are phenomena closely linked to concerns about environmental degradation (Le Roy Ladurie, 2021). Climate change is closely related to many problems, either as a cause or as a consequence (Kaçmaz Akkurt, 2021). Rapid urbanization and the human activities associated with it are causing climate change at both micro and macro levels in urban areas (Kaçmaz Akkurt & Şemsiyeci, 2024). Therefore, climate change is a significant factor that directly and indirectly affects essential human activities, such as agricultural and livestock production processes and settlement preferences in social life (Alkin, 2022). Biodiversity, on the other hand, is steadily declining. The reduction in species is leading to large-scale ecological disruptions that result in irreversible damage to ecosystems (Ritzer, 2020). Rising temperatures are also contributing to the increase in sea levels. This situation will cause millions of people to be displaced as refugees, lead to crop shortages, famine, and many other issues. Another ecological problem is the acidification of the oceans. Oceans play a crucial role as carbon sinks, mitigating the greenhouse effect. However, human-driven activities and the escalating environmental damage are causing oceans to become more acidic. As a consequence, in the future, the foundational layers of the food chain will be compromised (Wall, 2010). The close relationship between current issues and future consequences is a matter that requires attention. This is because each of these problems should be viewed as challenges that transcend the present time.

One of the pressing issues is water pollution. Water pollution has reached critical levels in many regions of the world. Throughout history, humans have continually used water for various purposes, such as irrigation, fishing, cooking, and drinking. However, this valuable and natural resource is increasingly being degraded due to human-induced activities (Giddens, 2013). In the past, water was regarded as a common resource shared by all societies. However, the depletion of water resources and the diminishing availability of clean water have transformed water into a valuable and increasingly scarce commodity (Ritzer, 2020).

On the other hand, "while the primary consumers of the world are the wealthy, the most severe consequences of environmental harm caused by growing consumption are felt by the poor" (Giddens, 2013). Emerging economic inequalities should be regarded as a significant factor in hindering growth (Florida, 2018). While dispossession is not confined to specific environmental regions, its most ruthless and cruel practices are often observed in underdeveloped, vulnerable, and low-quality areas (Harvey, 2019). Environmental issues, such as climate change, are having widespread impacts across the globe. However, for Southern countries, combating environmental challenges is considerably more difficult due to their heightened vulnerability (Rochyadi-Reetz & Teng'o, 2022). A key reality that needs to be highlighted here is the active role that ecological threats play not

only in environmental degradation but also in the creation of an increasingly unequal world.

Individuals living in impoverished countries are often deprived of essential life services, including healthcare, proper nutrition, education, and a healthy environment. The world's poorest regions are predominantly located in the Global South, where people are the most vulnerable, facing severe water-related challenges. While projected data suggests that more than half of the world's population will face water scarcity by 2030, current conditions have already reached dangerously critical levels. One of the key issues regarding water is the melting of glacial mountains, which serve as a major source of freshwater. As glacial melt continues to increase, the water crisis will deepen further. This situation is likely to lead to the displacement of populations affected by water scarcity. In the regions they migrate to, conflicts related to water resources are likely to emerge (Ritzer, 2020).

The sources of relatively easily accessible fossil fuels are being rapidly depleted. Extracting more of these resources means accessing reserves that are "deeper underground, dirtier, and increasingly costly to extract, or those that will impose greater environmental costs" (Diamond, 2006, as cited in Ritzer, 2020). As a result, developed countries, by securing the majority of these resources, will exacerbate the exploitation of underdeveloped and developing nations. The economic-driven planning by developed countries, which affects developing societies, has become a critical issue for less developed nations, as significant as the environmental problems they face. Finally, potentially hazardous waste is produced across almost every part of the world. Among these wastes, e-waste, which has been discarded from use, is particularly prominent. The primary contributors to e-waste are northern countries. Products that are no longer wanted are disposed of as trash and shipped to underdeveloped and developing countries. These nations, often grappling with poverty, accept the waste as a means of generating income. However, e-waste contains many hazardous substances that pose risks to both human health and the environment. For instance, a mobile phone contains approximately 200 chemicals. The extent to which these chemicals are released during the process of dismantling such phones is not fully understood. As a result, the waste leads to the contamination of the local population, soil, plants, and animals (Ritzer, 2020). All of these issues are, in general, human-induced. Therefore, the field of environmental sociology is gaining increasing importance as an interdisciplinary domain in the scientific community.

The concept of sustainable development, first defined in the United Nations 1987 report *Our Common Future*, does not advocate for the limitation of economic growth but rather promotes the conservation of renewable resources and biodiversity, fostering an awareness that encompasses all aspects of environmental protection. In this context, sustainable development means that growth should be pursued in a manner that minimizes the consumption of physical resources and keeps pollution levels to a minimum (Giddens, 2013). The *Our Common Future* report represents a significant step within the field of environmental sociology.

For nearly four decades, environmental sociology, which has been striving to establish a significant place in both the world and Turkey within the discipline of sociology, developing its own concepts and theories, and applying them in studies on the society-environment interaction, is an important issue (Eryılmaz, 2017b). Therefore, environmental sociology has become a much more diverse field today. The fundamental principle of environmental

sociology is that environmental issues should be addressed not only from a technical perspective but also from a social perspective. As a result, economic, ecological, and social issues emerge as central themes (Overdevest, 2024). In pre-capitalist times, individuals lived in close proximity to nature. However, with the advent of capitalism, this system created a sharp division between human life and the natural world (Giddens, 2012). Understanding the true significance of this division requires a thorough analysis of the emerging relationship between human existence and the natural environment.

In general, strong relationships must be established between countries and, more specifically, between individuals to foster cooperation in the use of resources. Both natural processes and human interventions contribute to the degradation of environmental systems. This, in turn, leads to global inequalities in the use of natural resources. As a result, some regions experience environmental problems more profoundly than others. Notable examples of this include the damage caused by the Chernobyl disaster, pollution from countries bordering the Danube River, and the environmental degradation caused by Shell Oil in the Gulf of Mexico (Kılıç & Tok, 2014). At this juncture, the escalating environmental degradation and advancing technological developments have made it essential to integrate environmental and communication fields in addressing these challenges.

Art, with its qualities of understanding social life, observing the changes that occur, and providing a perspective on social life with its unique background, has become an important object of sociological research. Through art, it is possible to observe expectations for a new social design. Cinema like music, architecture, sculpture, and painting, is an important form of art that reflects the traces of society (Alkın, 2021). Indeed, issues such as deforestation, the loss of biodiversity, extreme weather events, environmental justice, and racism are among the fundamental challenges faced by humanity. People learn about these issues through various channels such as personal experiences, meetings, media, and film. These interactions form the foundation of the discipline of environmental communication (Takahashi et al., 2022a). At this point, environmental communication is based on a deeper understanding of the relationship between humans and nature (Roush et al., 2010). In addressing environmental problems, it is crucial to consider not only humans but all living beings, which highlights the significant role of communication (Opperman, 2019). Environmental communication has existed as long as humans have interacted with nature. However, as a formal discipline, environmental communication has a relatively short history (Roush et al., 2010). Therefore, while environmental communication is an important tool for understanding the true content of problems related to environmental issues, it is difficult to claim that it has a long-established history as a discipline. Nonetheless, environmental communication should be regarded as a crucial medium that continually manifests itself in both the individual and societal aspects of human life.

According to Pezzulo and Cox, every individual is engaged in environmental communication in their daily life. Wearing a t-shirt with an environmental message, using a recyclable water bottle, discussing the harms of hamburgers, participating in movements that critique the damage caused by fossil fuels, or biking home are just a few examples of how an environmentally conscious approach is reflected in our everyday activities. At this point, whether verbal or non-verbal, we are in constant communication to express our views on the environment. As defined by Kenneth Burke (1966), environmental communication is an interdisciplinary field that emerges as various forms

of symbolic action, such as language, visual elements, music, and scientific reports. Burke discussed even the persuasive power of language that does not carry emotion. In this context, communication focuses on both what is expressed and how it is conveyed to others (Pezzullo & Cox, 2010).

Environmental messages derived from research on issues like climate change may not always hold universal validity across all contexts and times. These messages can vary depending on factors such as the intensity of interdisciplinary approaches and the diversity of the fields on which the research is based (Takahashi et al., 2022a). In this regard, can words and symbols extinguish a forest fire? Can they mobilize endangered communities? Can they reverse large-scale environmental impacts like climate change or prevent the spread of an epidemic? Can they have an impact on the non-human world? (Schmitt et al., 2022). For example, interventions and public communication campaigns aimed at reducing plastic use, particularly single-use plastic bags, through strategies such as reuse, recycling, bans, or charges, have increased in recent years following a period of stagnation in the late 1990s. However, these campaigns are highly diverse in nature, and few have been thoroughly evaluated (Rice & Moxley, 2022).

Environmental issues such as climate change and pollution trigger discourses that spark debates in the public and political spheres. While some environmental problems can be experienced personally, a large portion of the population primarily acquires environmental information through various media channels. In this context, media not only serves an informational function but also raises public awareness about environmental issues, making people more sensitive to these problems (Klinger & Metag, 2022). In this regard, environmental movements have become integral to communication, as they require ongoing dialogue among individuals and communities to collectively form consciousness and collaborate on solutions to environmental challenges.

In contemporary terms, the environment refers to the general category of natural entities, including plants, animals, and ecosystems. Since the 1960s, the concept of the environment has been utilized by environmental movements. Moreover, these movements have evolved into a moral force advocating for the prevention of harm inflicted by humanity on the environment (Giddens & Sutton, 2020). The late 1960s and early 1970s marked a period of increased social change. During this time, millions of people organized protests for peace and social harmony. Although these environmental movements did not receive as much attention as anti-war messages, they led to improvements in environmental governance and legal frameworks related to industrial activities. The 1992 Rio Summit raised awareness of global environmental degradation, social justice, and population issues, contributing to an increase in global environmental consciousness (Roush et al., 2010). From the late 1960s onward, the environmental movement grew worldwide, becoming a significant part of the public, political, and media agenda. The increased public interest in issues such as climate change also reflected in academic research in the field (Takahashi et al., 2022b). In short, concerns about the unsustainable growth of this new industrial order, exceeding its natural resources, began around the 19th century. However, the genuine acknowledgment of these issues dates back only 30-40 years (Giddens, 2009). Therefore, while the roots of these problems lie in a more distant past, their true significance and content are grounded in more recent history.

The destruction of habitats in one region, the privatization of services in another, the sale of land abroad, and biopiracy are all situations that create their own internal

dynamics. The unequal development inherent in capitalist expansion has historically led to the revolution of environmental peoples (not specific classes). This revolution, being opposed to capitalist development, is inherently anti-capitalist. The struggle of the Ogoni people against Shell Oil's damage to their lands, long-standing resistances against World Bank-supported dam projects in India and Latin America, peasant movements against biopiracy, fights against genetically modified foods, wars to protect local production systems, defense of indigenous peoples' access to forest areas, political struggles against privatization, advocacy for workers' and women's rights in developing countries, campaigns for the conservation of biodiversity, and resistance to habitat destruction are part of a wave of protest movements that spread rapidly across the globe in the 1980s and beyond (Harvey, 2019).

Despite the anti-capitalist activities of environmental movements, consumption, one of the key drivers of capitalism, continues to increase globally. Examples such as "2 million plastic bags being discarded every 5 minutes, 20 million tons of car tires being produced annually, 106,000 beverage cans being consumed every 30 seconds, and 2.5 million electronic devices being discarded while still functional" illustrate the massive scale of consumption. This situation is transforming the world into a landfill. Moreover, the environmental damage is not only caused by the disposal of these products but also by the depletion of resources used in their production (Tekeli & Ataöv, 2017). Despite recent technological advancements, environmental problems continue to escalate. While there have been positive developments in areas such as material progress, improvements in health, and the shift toward democracy, issues like climate change, biodiversity loss, and environmental degradation are intensifying (Boström & Lidskog, 2024). The increasing economic development in the world may signal progress in some respects, but it inherently presents a strong paradox. Economic advancement, driven by technological progress, often proves to be far from a solution to many environmental issues. Furthermore, it has become a fundamental problem regarded as the primary cause of the existing crises. This emerging situation should be seen as the most striking consequence of the paradox in question.

As a result, the damage humans have inflicted on nature has reached significant levels. The destruction of forests, contamination of water sources, and the decline in biodiversity are just a few examples of the harm humans have caused to the environment. Climate change, toxic waste, and acid rain increasingly threaten the world each day. In this context, scientists emphasize the need to abandon the human-centered perspective that has persisted for centuries and adopt an environment-centered worldview (Özdağ, 2017). Furthermore, the unequal distribution of wealth has created populations in many parts of the world that lack access to food and clean water. The decline in biodiversity, along with the constant desire for economic and industrial growth, has led to an increase in social, economic, and environmental injustices (Şen, 2018). At this point, raising awareness and ensuring a clean world for future generations highlights the importance of environmental communication. When it comes to environmental communication, one of the most striking tools is cinema. Cinema serves as a powerful technological medium to raise environmental awareness both visually and verbally. Many documentary films have been made on this subject. Documentaries such as *Arica* (2020), *Chasing Coral* (2017), *Wasted! The Story of Food Waste* (2017), *Tomorrow (Demain)* (2015), *Waste Land* (2010), and *The Cove* (2009) are significant global works aimed at increasing awareness on topics like the environment, sustainability, and climate change. In addition, important works

have also been produced in Turkey in the field of documentary films. *Buğday* (2017) directed by Semih Kaplanoğlu, *Bir Zamanlar Gelecek: 2121* (2022) by Serpil Altın, and *Büyük Menderes* (2018) and *Eber* (2019) by Yavuz Özer are notable award-winning documentaries and films with an environmental theme in cinema. Therefore, it is noteworthy that significant contributions from Turkey exist on such a topic, which is of great concern to all of humanity.

2. Methodology

Content analysis, a method of collecting and analyzing text content, dates back to over 100 years. It is widely used in many fields such as history, literature, psychology, and education. Content analysis refers to elements such as words, symbols, images, and themes in a message. It can cover various forms of communication such as films, books, newspapers, artworks, or photographs. As a non-reactive method, content analysis allows for the identification of concepts or messages in a text or transmitted to the reader without the researcher's influence during the analysis process. The researcher aims to uncover messages in any communication source (such as books, videos, or films) through content analysis. Researchers can utilize both quantitative and qualitative methods in content analysis. In qualitative content analysis, researchers examine texts containing statistical data and view these texts as cultural elements that convey social meanings (Neuman, 2014). This study uses qualitative content analysis. In this context, the analysis of *The Age of Stupid* documentary film is conducted through its environmental discourses.

This study provides an in-depth analysis using qualitative content analysis methodology. The film has been examined in detail. After a comprehensive review of the film, the prominent discourses highlighted throughout the film have been identified. These include the discourse of ecosystems, environmental justice, and ecosocialism. Subsequently, the film was manually transcribed into text. The dialogues from six different stories, the anonymous archivist, and the external voice were transcribed and divided into eight different sections. The three identified themes were analyzed through the transcribed dialogues. The categorization of these themes as ecosystem discourse, environmental justice discourse, and ecosocialism discourse was based on the most emphasized topics throughout the film.

The Age of Stupid, examined in this article, is a 2009 British documentary film directed by Franny Armstrong that blends drama, documentary, and animation. The film stars Pete Postlethwaite, Jehangir Wadia, and Layefa Malin, with a budget of €450,000. Additionally, the film's first screening was held in a cinema tent powered by solar energy, without the use of grid electricity. Furthermore, the film has won first-place awards at six different festivals. The IMDB rating is 7.0¹.

3. Findings

The film is set in a global archive established 800 km off the coast of Norway in 2055, in the middle of the sea. Due to climate change and global warming, all cities will have been destroyed and life forms will have vanished by 2055. In the film, an unnamed archivist (Pete Postlethwaite), who remains the last person on Earth, is assigned the task of safeguarding the archive, which contains the world's art, books, and scientific documents. The archivist, who mainly presents archived videos from the years 1950 to 2008, says, "we could have saved ourselves, but we didn't. It's amazing" (4:18), emphasizing that if action had been taken, there would still have been a chance to make a difference.

The film intertwines six real-life stories, connected in a narrative. These include the story of an 82-year-old mountain guide witnessing the melting of glaciers in the Alps, an investment expert in India striving to establish a low-cost airline, a wind turbine developer in the UK fighting to reduce carbon emissions, a Shell employee who saved hundreds of lives during Hurricane Katrina, a young woman in Nigeria trying to become a doctor while facing poverty in the country's richest oil region, and finally, the story of two refugee children separated from their families and exiled due to the war in Iraq caused by oil.

This entirely real-life based film highlights what the world could look like in the next 20-30 years if no preventive action is taken. It also discusses how, through global animation sequences, these catastrophes can be addressed with an equalitarian political approach worldwide.

3.1. Ecosystem Discourse

Ecosystems are systems composed of living organisms and non-living materials. These two components interact to form ecosystems (Tekeli & Ataöv, 2017). The definition of the ecosystem is, "a system in which the distribution of matter and energy, all events and experiences, are shaped by principles of solidarity, dependency, and limitation between living beings, non-living elements, and their environment" (Keleş, 2021). Within this system, humans are positioned in a way that continually increases their desires. As a result, technology is developed to alter the position of resources. This leads to the degradation and pollution of both the local and distant environments (Tekeli & Ataöv, 2017). The ecosystem discourse focuses on how we perceive nature and the environment, attempting to explain this through the concepts of ecology and ecosystems. Additionally, this discourse, which suggests that humans disrupt the natural balance, has transformed from a scientific model to understand plant and animal communities into a type of organizational weapon used to systematize, expand, and morally invigorate the environment (Hannigan, 2006).

At the beginning of the film, the depiction of London submerged under water, the fire of Sydney and the Amazon rainforest, Las Vegas turning into desert, nuclear war destroying India, and the complete melting of snow on the Alps (1:53) are presented as evidence of the exploitation of nature by humans, aligning with the ecosystem discourse. The visible evidence of climate variations by 2010 is conveyed through the following statements by news from the archive:

"101 degrees Fahrenheit, it's the hottest day ever recorded" (6:36).
 "People are in extreme fear due to the incredible autumn rainfall in India that killed 700" (6:40).

"Last year, Melbourne officially had its driest year on record" (6:47).
 "The desert is advancing at a nominal rate of 5 km per year" (6:51).
 "18 countries are underwater and one and a half million people are affected" (7:02)".

At the beginning of the film, the visible effects of climate change, such as rising temperatures, droughts, melting glaciers, increased greenhouse gas emissions, floods, and extreme rainfall, are highlighted. From an ecosystem discourse perspective, these serve as evidence of the damage humanity has inflicted on nature and the environment. Events like glacier melt, rising sea levels, and expanding deserts demonstrate the deterioration of the ecosystem. These are not only signs of disrupted natural balance but also signify social and economic threats. Environmental issues such as desertification and

the destruction of natural resources are also endangering human habitats. Despite being addressed by many news channels, these issues have been ignored by governments and politicians.

On the other hand, Mark Lynas, author of books such as *Six Degrees: Our Future on a Hotter Planet* and *Our Final Warning: Six Degrees of Climate Emergency*, highlights that the greatest challenge related to climate change is the impact of the emissions caused. According to Lynas, as a result of our evolution, we are a species prone to reacting quickly to situations such as attacking armies or wild animals. However, we are not prepared to respond to gradual changes, such as those caused by climate change. Therefore, we must begin preparing now for these dangers that will occur in the future. If we wait for the temperature to rise to the point of no return for our planet, it will be too late to stop it. If the temperature increase mentioned occurs, the system that balances all conditions for life will be disrupted. This will lead to massive carbon release from the soil and trees. As a result, for example, methane gas will be released from the frozen land in Siberia. This means that more greenhouse gases will be emitted than currently present in the atmosphere. For this reason, Lynas emphasizes the importance of being cautious. The European Union, multinational corporations, Greenpeace, and political parties are in agreement about stabilizing the temperature at pre-industrial levels. If the level of emissions released up until now is reduced, balanced, and 80% of the excess is withdrawn, the effects will begin to decrease by 2050. However, the transition to a less productive economy for all civilizations will be humanity's most difficult and greatest task so far (46:35). Therefore, in accordance with the ecosystem discourse and also example of climate change, the importance of scientific studies aimed at demonstrating and preventing the destruction of the environment resulting from human struggle is emphasized (Eryılmaz, 2017a).

In another scene, Fernand Pareau, a mountain guide on Mont Blanc, the highest mountain in Europe, states that there has been approximately a 150-meter melt since 1945. The guide, who shows an English family around the ski resort, points to the stairs in the area where skiing should take place, mentioning that stairs have been added almost every year due to the melting, with the following words:

“Tourist: When you was young the temperature why? How?.

Guide: We used to have gorgeous summers but never as hot as now. Before, we used to graze cows here. They walked around the edge of the glacier and went up there to eat the grass... Now that's finished. Before, there were no ladders. We just stepped straight onto the glacier. So you can see that it's melted by about 150 meters since 1945. Geologists could give the exact numbers but that's what it looks like to me... This year they had to add another ladder. So the glacier has melted between 7 and 10 metres this year. And it will melt even more with this hot weather” (9:26).

The conversation between the mountain guide and the tourist can be explained through the ecological changes caused by global warming. As mentioned by the mountain guide, this ecological change can also be viewed within the framework of the ecosystem discourse, where scientific findings are ignored, and governments fail to create policies due to economic concerns. The following words of the mountain guide highlight that the ecosystem has reached its at final stage:

“Now, with global warming, things are different. I feel that now we only have two seasons. Winter turns directly into summer without us noticing. What should we do? I don't know. I don't know. The glaciers are melting more every day” (11:04).

The mountain guide's observation of the melting glaciers in the Alps and the statement "now, with global warming, things are different" is, in fact, a phenomenon that needs to be viewed from a larger perspective. The melting of glaciers in the Alps is not only disrupting the mountain ecosystem but is also causing the degradation of the region's flora and fauna. This, once again, points to the disruption of natural systems within the ecosystem discourse, signaling that no collective action is being taken to address these issues.

In the documentary, after speaking with the mountain guide, the couple takes action when they return to England. After realizing the damage they have caused to the environment, people begin to make changes in their lives. The British couple's reflections on air travel and their carbon footprint exemplify another aspect of the ecosystem discourse (49:22). This discourse reflects an effort to understand the negative impact of human activities on the natural environment. The fact that a single flight consumes their entire annual carbon budget demonstrates the fragility of the natural world. Within the framework of the ecosystem discourse, this highlights the damage that humans have caused to the ecosystem and the responsibility they must take. At this point, activities like running the car on chicken fat and producing their own food have become the couple's focus. However, in later scenes, their struggle for wind turbine farms and the report they submitted to a committee ends in failure. This further demonstrates how individual and social roles in the ecosystem discourse are intertwined and obstructed.

Moreover, scenes such as a group of climbers covering a glacier with special paper to reduce summer melting (15:43), a man recycling old fireman pants to balance out the carbon emissions from his flights (15:52), and the mountain guide's protest with environmentalists to reduce heavy truck traffic through a local tunnel by biking through it at certain hours of the day (1:06:11) are also consistent with the ecosystem discourse. According to this framework, environmentalists are attempting to "return nature to itself" in response to the harm humans have caused to the environment (Eryılmaz, 2017a).

Additionally, the statement, "every part of modern life is now literally made of oil from" (18:08), highlights the negative lifestyle humans maintain towards the natural world. The excessive use of oil and fossil fuels disrupts the balance of the ecosystem. Within the context of the ecosystem discourse, this is a warning: The depletion of resources threatens humanity's future! These words demonstrate how, beyond the beneficial uses of petroleum, its excessive consumption has caused significant harm to the ecosystem (18:01). As seen, in line with the ecosystem discourse, petroleum should be used in various areas that benefit humans. However, it is being recklessly consumed without consideration for future generations, particularly in the transportation sector, which increases environmental harm.

On the other hand, a female doctor in Nigeria highlights the damage done to nature by the oil company, Shell. It shows that the water they drink is highly polluted and filled with frogs. "With the help of a microscope, you can see the disease we have inside" (19:29) reflects the damage Shell has caused not only to the local people but also to nature. In the following minutes of the documentary, the young doctor, who shows the damage Shell has done to the air, water, and nature, is also seen selling gasoline made from Shell's oil, in an attempt to make money (1:02:58). Here again, as indicated by the ecosystem discourse, while there is a complaint about the destruction of nature, it is also revealed that the local people are part of this system, driven by their needs (Eryılmaz, 2017a).

3.2. Environmental Justice Discourse

The environmental justice discourse emerged from the struggle against waste dumping in the state of North Carolina, USA, in 1982. Over time, the concept expanded both in terms of content and geographic reach, far beyond the United States (Martinez-Alier et al., 2014). The environmental justice discourse now represents the convergence of seven previously independent movements. The first is the civil rights movement, which focuses on racial issues. The second is the movement defending rights for the rights of undocumented workers and migrants, particularly in terms of occupational health and safety. The third is the indigenous land movement, which defends the rights of groups such as Native Americans and African Americans. The fourth is the environmental health movement, which focuses on the anti-toxins movement. The fifth is the movement centered on issues like the lack of green spaces, waste sites, and poor air quality. The sixth is a human rights movement, which focuses on peace and solidarity. The seventh is an expanded immigrant movement that includes fundamental citizenship rights, such as the right to clean air and water. Moreover, the environmental justice discourse also calls for greater economic equality, international environmental regulations, smart growth, and more focus on solving environmental problems, making it a broad environmental policy framework (Faber, 2008). The discourse aims to address all issues related to inequality in race, gender, and class, while focusing on the fair distribution of environmental impacts and sharing of costs within societies (Taylor, 1997).

One of the most striking stories within the environmental justice discourse in the film is the exploitation of Nigeria, a country rich in oil and natural gas reserves, by Shell Oil. Although Nigeria possesses oil and natural gas reserves, it has been impoverished by the influence of core countries. In the following scenes, we see a young female doctor who has received medical training in a region that lacks a hospital, school, clean water, and electricity. She wants to establish a health center to treat those affected by the damage caused by oil. At this point, the young woman explains that Shell promised to build a health center in the region, and after waiting for three years, the administration canceled the project. As seen, in Nigeria, an exploited peripheral country where all natural resources have been drained, Shell's management, which has grown wealthy from the country's reserves, does not support the establishment of a medical center to address the health issues they have caused in the region. Additionally, the young doctor is trying to raise money to establish the facility by fishing in a lake. However, due to the contamination of the lake with oil, large fish have disappeared, and only small fish remain. These small fish are washed with detergent after being caught to prevent people from being poisoned by the oil in the lake (19:56). Thus, developed countries, in their pursuit of oil reserves, cause water pollution in Nigeria, leading to the extinction of fish species.

The film also shows an incomplete construction of a building in the Niger Delta, where the construction of hundreds of community aid projects has been halted. Shell claims that the reason for this is the risk of kidnapping in the area. However, 13% of the oil revenues should be allocated to community development projects. Despite this, the people have received almost none of their share (20:18). In the Niger Delta, Shell and other oil companies represent one of the greatest manifestations of environmental injustice. These oil companies have caused widespread impoverishment by placing all social, economic, and environmental costs on the people (Martinez-Alier et al., 2014).

The Niger Delta, despite being home to a large oil reserve, remains impoverished. Instead of improving the income of the people, oil revenues have led to a worsening situation

due to corrupt policies. The local population cannot benefit from the natural resources in their own region. Within the framework of environmental justice discourse, this situation demonstrates that oil companies and the government not only disregard the rights of the people but also deprive them of their natural resources, continuing environmental degradation for their own benefit. Shell's annual pollution of the air and environment in order to dispose of gas flares is clearly evident from the following statements:

"The local people's health problems are compounded by gas flares burning night and day throughout the Niger Delta. Asthma, bronchitis, skin diseases, and cancer have all been linked. That gas is found alongside oil but as it's dangerous to transport so it can't easily be sold to overseas markets. It could be used for cooking and heating within Nigeria. But building the infrastructure is expensive so the oil companies just burn it off. The flares emits about 70 million tons of carbon dioxide every year, more than the annual emissions from 10 million British homes" (22:41).

As mentioned above, in the region, natural gas is released during oil production, and because the cost of storage is high, billions of cubic meters of natural gas are wasted every year. Moreover, Shell's reckless policies in extracting reserves lead to the inefficient consumption of natural resources in Nigeria, while also triggering air pollution and causing serious health problems within the population. The people living in the Niger Delta are struggling with respiratory diseases, skin diseases, and other health issues caused by the oil companies. This situation, in line with the environmental justice discourse, highlights that the treatment costs for the local population are not covered. In these regions, where health systems are insufficient, the importance of the environmental justice discourse is emphasized.

"In 2005, 13 billion pounds, 1.5 million pounds per hour, and 400 pounds per second. A large portion of this massive glacier comes from Nigeria. This is extracted from a place where most people earn less than 1 dollar a day" (19:06).

As Shell earns massive profits globally, the majority of the local population struggles to survive on less than a dollar per day. The failure to share the oil revenues with the people has contributed to the further impoverishment of society. The negligence of both the oil companies and the government in addressing this issue demonstrates a violation of environmental justice. Shell's refusal to take responsibility towards the local people highlights how the problem in environmental justice is not only ecological but also deeply social.

In another scene, the female doctor visits a neighboring town. In this town, the government was responsible for a massacre. The town had become embroiled in a major conflict over land ownership for an area Shell intended to drill for oil. Military forces were sent to the area to find terrorists. The woman visits the town to hear the story from the locals. A woman from the town recounts how the water had become highly polluted, and during that time, she was pregnant, but her baby died after birth. The International Amnesty Organization investigated the situation, and it was concluded that the government was responsible for the deaths and the events. Shell Nigeria, in an attempt to avoid the consequences, destroyed the reports (24:57). One of the largest sources of income, the oil revenues, are distributed unequally. However, the groups that experience the least environmental and social impacts are often the ones who own these companies. The following words from the woman illustrate this situation:

"You know it takes a lot of money to become a medical student. I need to pay for my accommodation and other things. And I want to put on nice clothes. That means I will start

the fishing from this year till maybe four years time... The fishing is not good. Because of the oil spills there killing most of the fish. We don't even have big fish again, just small ones... Sometimes the oil will be all over the whole fish. So you have to wash the fish, maybe with Omo. They talk in the news that we have produces one thousand or one million barrels of oil today. But instead of we being rich we are getting more poorer" (21:08).

The Niger Delta is considered one of the most polluted places in the world. For many years, it has become a hub of exploitation by oil companies that harm both the environment and the people. Nigeria is a region where "at least one oil spill can happen at any given moment". Although the people living there have survived war, they continue to battle against pollution on a daily basis (Bassey, 2022).

In the film, another striking story involves two Iraqi children who, as a result of the war caused by oil, are forced to flee the country's borders. These children, who lost their father in the war -a war that impoverished Iraq and stripped it of its ability to use its own resources- now make a living by selling lightly used shoes discarded by developed countries, which are said to be too old to wear (38:22). These scenes align with the environmental justice discourse, illustrating how developed nations exploit the resources of developing countries, despite having no rightful claim to them. The words of the Iraqi refugee child highlight this issue within the context of environmental justice:

"Our dad had a donkey. We used to ride on it. I got scared... when it ran fast. But when the Americans came in the middle of the night, we had to run away. Because we thought they'd kill us. When we came back next morning we found our donkey dead. Our dad was the best one in all of Iraq. But then the Americans came and killed him. We found him dead in the morning. I wish he hadn't died. I still can't believe they killed him. They completely destroyed our country and they completely destroyed our lives" (32:34).

The two Iraqi children, who became refugees due to the war in Iraq, can be seen as a significant example of the environmental justice discourse. This is because oil resources are being exploited to serve the interests of powerful nations, while the local population and natural areas bear the brunt of the damage. Furthermore, the war and oil extraction lead to the degradation of the land, the depletion of water resources, and the disruption of natural balance. The killing of the donkey and the forced displacement of these people after the arrival of the Americans is a clear manifestation of environmental violence. In this context, the war and refugee situation in Iraq serve as a stark example of environmental justice discourse.

In another scene, the words of an Indian investment expert who wishes to establish a low-cost airline stand out:

"We offered them tickets for 600 rupees, and then reduced it to one rupee. How many people can buy a one-rupee ticket? We estimate that every Indian can. Even a rickshaw driver, even servants. You know, in a country with a billion people, in 2005, it was ridiculous that only the elite could fly" (6:03).

The investor highlights that the poor population in India has been deprived of air travel. By offering low-cost flights with short durations, the goal is to make this mode of transport accessible to the entire country. This could be seen as a reflection of the justice discourse. However, when considered in terms of environmental justice, the increase in air travel would lead to greater environmental harm. As a result, the impoverished segments of society would once again bear the brunt of this environmental destruction.

Additionally, the struggle of a British couple seeking to establish wind farms also brings environmental justice to the forefront. “It normally always comes down to with wind farms is aesthetics. You know everything else is basically put together to try and back up the ultimate thing and the ultimate thing is. They don’t spoil want it to their view” (54:11). This reflects the practical challenges of environmental justice. Individual efforts alone cannot always ensure justice. As seen in this example, environmental justice requires not only the equal distribution of resources but also collective action within communities. “Each human being on the planet would have equal rights to the Earth’s resources. Equity is the only option” (1:10:33) reflects the fundamental principle of environmental justice. However, as highlighted in the film, resources are distributed unfairly.

3.3. Eco-Socialism

Eco-socialism emerged from the fusion of the fundamental principles of socialism with ecological thought. While socialism critiques capitalism for being based on the exploitation of labor, it also argues that capitalism is responsible for the destruction of nature (Değirmenci, 2022). The environmental issues threatening our climate and planet are the consequences of economic growth. As economic developments increase, so does the demand for fossil fuels such as oil and coal. In contrast, eco-socialism, which emerged from the critique of capitalism, presents itself as “ecologically viable and socially just” movement aimed at preventing environmental destruction. Eco-socialism asserts that socialism without an ecological perspective is worthless (Wall, 2010). It broadly defines environmental problems, including vehicle pollution, unemployment, urban decay, the lack of social services, and poverty (Pepper, 1993). Fundamentally, eco-socialism seeks to preserve the essence of socialism while extending it. In other words, it supports the elimination of the capitalist state approach, that supports the class system, and the establishment of a more fair and moral system for environmental protection (Kovel, 2022).

In the film, the statement, “capitalism’s only goal is ever expanding growth but ever expanding growth on just the one not expanding planet. This is impossible” (41:09) significant in the context of eco-socialism. Capitalism’s desire for perpetual growth leads to the depletion of the planet’s limited resources. Eco-socialism argues that this constant urge for growth results in ecological disasters. The following statements from the film also highlight the foundation of consumerism and capitalist thought:

“Why are American cities designed so that it’s almost impossible not to have a car? Why were 100 railways in cities like New York, Philadelphia and Los Angeles built and then deliberately destroyed? Why did the electric car get scrapped? ... Why was an oil company lobbyist allowed to change official government reports on global warming? Why was the same PR firm employed by the tobacco industry to persuade the public that smoking is healthy, then employed by the oil industry to convince us there was still doubt about climate change? Alternative energy has been available for 50 years. Why have we barely used it? Why were solar panels taken off the White House? Because right from the early days of the industry the oil men and their obscene profits have had an unhealthy influence on the people running our country and now they are the people running our country. And they’re providing the cash too. Oil business isn’t just in bed with the government; it is the government” (23:32).

These statements demonstrate that, within the framework of eco-socialism, capitalist interests and the fossil fuel industry are the largest barriers to the adoption of renewable energy sources. Another scene from the documentary presents the following as an example of eco-socialism:

“Skiing in the desert. Heating the air. Lighting empty offices. Energy is so ridiculously that cheap it makes perfect economic sense to just piss it away. China is the new bad guy. Because, they are building a new power station every four days. But a quarter of that energy makes stuff for us. Western companies pay Chinese workers crap wages to make crab plastic toys then ship them to Europe and wrap the in more plastic. Planters drive to the-out-of town megastore in their gas guzzlers, plastic toys and plastic goes into plastic bags. Two days later, the toys break. They immediately return to landfills in China, where they lie for 50,000 years ... 800 times more energy is wasted, and it’s 10,000 times more expensive for you. It’s a tricky decision” (34:39).

Furthermore, the mountain guide’s home is near a place where 4-5 thousand trucks pass daily. The guide says these trucks are heading to Italy: “Most of them come from the North with potatoes. They go through the tunnel to be washed in Italy. Far down Italy. And then come back later as mash. Same with milk. They transport it to make yoghurt. And then bring it back. It’s madness. Madness” (38:40). This commentary aligns with eco-socialism’s critique. The mountain guide’s reflections, “Our generation caused these problems. Always development, development, development. Always asking more and more from the planet” (33:15) and “when we were young we didn’t have running water in the house. We had to fetch all our water which taught us to use it carefully. The same with electricity ... Our parent taught us that but we didn’t think to teach our children” (34:06) critique capitalism within the context of eco-socialism.

Additionally, the devastation caused by Hurricane Katrina is an example of the ecological damage inflicted by the oil industry on the Louisiana region. Before the hurricane hit, the oil industry had weakened the region’s defense against major natural disasters (Faber, 2008). In this context, the Shell worker caught in Hurricane Katrina can be analyzed within the eco-socialism discourse. Despite experiencing this environmental devastation, his positive thoughts on oil illustrate how humanity has been corrupted. This situation can be read as a combination of environmental destruction and social inequality, as well as the fusion of capitalism’s destructive impacts on nature and society. “You see it, you spell it, and you know it’s crazy and you know ugly and smells so much like money it’s just beautiful you know” (18:59) reflects this eco-socialist critique.

The Indian investment expert, however, points out that there are far more significant sectors to consider before targeting the aviation sector for environmental damage. According to him, it is a mistaken approach to single out one sector and place the blame for all this harm solely on that sector. His statement, you can prevent this damage by using fewer napkins, less paper, cutting fewer trees, buying eco-friendly cars, and not flying, draws attention. However, within the context of eco-socialism, this raises an important concern. While the investment expert’s primary concern is the welfare of the poor people, the result still circles back to a critique of capitalism. The profit-driven nature of the aviation industry can conflict with environmental protection goals. Eco-socialism emphasizes not raising flight prices as the expert suggests, but instead focusing on choosing more sustainable and less environmentally harmful transportation options. “We have only 200 aircraft commercially flying in India. China has 800. Ultimately you know we have a very long way to go playing catch up with China or catch up with Europe. Or you know say America Airline Southwest have 417 aircraft. That’s double the amount of aircraft we have as a country” (43:44) echoes the desire for constant production. The following statements show the scale of capitalism’s critique, which is central to eco-socialism:

“Lots of ideas have tried to take over the world, but there is only one winner. Together, they create within us an insatiable desire to buy more and more stuff. Americans have been advertised to the longest, and they now eat to consume twice as much energy as Europeans, nine times more than a Chinese person, fifteen times more than an Indian, and fifty times more than someone from Kenya. If all six and a half billion people here on Earth consumed like Europeans or Japanese, we’d need two more planets’ worth of resources. If everyone consumed like Americans, Australians, and Canadians, we’d need another four. By 2040, the population will reach 10 billion, and we will still need two more planets. Capitalism’s only goal is ever-expanding growth, but ever-expanding growth on just one, non-expanding planet. This is impossible. The current economic system is disastrous, not just for the planet, but for most people too. 100 years of capitalism have allowed the richest 10% to control 40% of the circulating money, while leaving 60% for the poor. Anyone wanting to live differently is thwarted every time, by profit-the only measuring stick. Destroying the planet is written into the system, and runaway climate change is not a very surprising result (40:13)”.

Lastly, the words of the Iraqi refugee child, “the Americans are not like us. We wear our shoes till they fall apart. But if any little thing is wrong with theirs they throw them away. American, British, all of them. Their old shoes come here in big containers. We buy them, fix them and sell them” (37:17) are also consistent with the eco-socialism discourse.

The oil production in the Niger Delta is a classic example of how the capitalist system exacerbates environmental destruction. Oil companies exploit natural resources, disregarding both the environment and local populations to achieve large profits. As seen in the film, the oil company continues to maximize its profits while ignoring the environmental damage and health problems faced by the people. In eco-socialism, such injustices are inherent to the capitalist mode of production. The statement from the film, “in a paradoxical country, finding oil makes the country poorer. As long as gasoline remains monopolized by a few people” (22:23) reflects how Shell’s oil extraction activities come at the expense of the environment and local communities. In the context of ecosocialism, Shell’s activities and major disasters such as climate change serve as examples of capitalism’s exploitative effects on both nature and humanity.

Conclusion

The aim of this paper is to analyze the documentary *The Age of Stupid* through the lens of environmental discourses. As a significant documentary film, *The Age of Stupid* has been analyzed in the context of environmental discourses using qualitative content analysis. A deep analysis has been conducted in alignment with the film’s objectives. The film, which presents six interconnected real-life stories, is evaluated within the frameworks of ecosystem discourse, environmental justice discourse, and ecosocialism discourse. Through these frameworks, the film critically addresses key concepts such as global climate change, environmental degradation, social responsibility, inequality, and sustainability.

The film, within the framework of ecosystem discourse, highlights how humanity’s disregard for scientific predictions that warn of potential environmental destruction ultimately leads to living in a degraded environment. This situation reflects the disregard for the ecosystem discourse. In the film, the British couple’s recognition of the environmental damage caused by humanity and their adoption of new lifestyle changes stand out. However, towards the end of the film, it is revealed that the report they presented to the committee regarding wind turbines was rejected. This outcome, as the ecosystem discourse suggests, underscores the inadequacy of individual awareness in safeguarding natural ecosystems. Therefore, as the ecosystem discourse emphasizes, the

solution lies not only in individual action but also in the collaboration between societies and nations to address the environmental crisis effectively.

Within the framework of environmental justice discourse, Shell's activities in the Niger Delta are shown to be causing significant environmental, social, and economic harm to the region. Environmental justice is framed not only in terms of ecosystem preservation but also the fair use of natural resources. However, the film emphasizes how developed countries exert influence over both ecosystem management and income distribution in developing nations. As a result, the people of the Niger Delta experience severe exploitation. Additionally, the plight of Iraqi children who are displaced due to oil exploitation and war serves as another significant example illustrating the concept of environmental justice. This highlights the intersection of environmental degradation and social inequalities.

When examined within the context of ecosocialism, the film prominently features the discourse of the external voice. It highlights the economic dominance that developed countries and large corporations impose on other societies, in alignment with capitalist structures. However, in relation to this, the film underscores a critical issue: the economic development of Western societies has been accompanied by significant environmental degradation. This relationship between capitalist growth and environmental harm emphasizes the unsustainable nature of development that relies on exploitation of both people and ecosystems, reflecting key tenets of ecosocialist thought.

Despite the aforementioned discourses, there remains very little land on Earth that is still suitable for natural life. A poignant remark made by the archivist in the final scene of the film is worth noting: "Why didn't we save ourselves while we still had the chance? Could the answer be that we somehow didn't find ourselves worthy of saving?" (1:21:33). These words represent a significant discourse, both for humanity and the natural world, calling for urgent action. For all these reasons, the words of the Shell worker who witnessed Hurricane Katrina "in my opinion, the resources we've used or misused over the last 100 years give me the right to rename this era. For example, the Age of Ignorance. The Age of Stupid" highlight the striking nature of the issue, emphasizing the profound consequences of human disregard for environmental sustainability.

In conclusion, cinema, which holds a significant place in environmental communication, not only has a lasting impact on visual messages but also on environmental discourses. New studies in this field should be evaluated through various discourses. The most important outcome of such works should not be understood solely in terms of their contribution to academic literature, but also in the role they play in raising both individual and societal awareness. The findings highlight the pressing issues of today's world. Likewise, they reveal the potential dangers the world may face in the future.

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1 <https://www.imdb.com/title/tt1300563/>.

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An Analysis of the The Age of Stupid Documentary in the Context of Environmental Communication

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Extended Abstract

The aim of this article is to evaluate the documentary film *The Age of Stupid* through the lens of environmental discourse. Environmental communication, especially after the 1980s with the acceleration of industrialization, has become a prominent field of study. This period has brought with it environmental issues that continue to affect the present day. The emerging problems highlight the significance of research and initiatives within the field of environmental communication. Perhaps one of the most important outcomes of these efforts has been the raised awareness regarding environmental degradation. The advancement of technology and the widespread use of mass communication channels have been crucial drivers of this awareness. One of the key films cited in the literature for its role in fostering this awareness is the documentary *The Age of Stupid*.

This article analyzes the documentary *The Age of Stupid* through qualitative content analysis. The film foregrounds six real-life stories and archival footage, which are examined through the lens of three environmental discourses: the ecosystem discourse, the environmental justice discourse, and the ecosocialism discourse. This is because the central theme of the film is based on the idea that nature is being destroyed by human activities, and these actions are contributing to climate change and global warming. One of the most striking emphases of the film is the notion that by the year 2055, very few species will remain in the natural world.

Ecosystems and the sustainable use of natural resources must be maintained through the cooperation of all societies, for both current and future generations. At the beginning of the film, archival footage presents news reports highlighting the extreme rise in temperatures and the intensification of floods. Despite numerous warnings, it is portrayed that life on Earth is approaching its end. From this perspective, when the film is analyzed within the framework of ecosystem discourse, several negative scenarios become apparent. One of the most significant of these is the activities of oil companies in the Niger Delta. In this region, due to Shell's operations, drinking water is severely polluted and filled with frogs. This situation illustrates how dire the conditions are for both the natural world and human populations. In addition to the degradation of aquatic ecosystems, the fishing industry is also adversely affected. The gases emitted by oil companies in this region contribute to global warming. This, in turn, leads to the deterioration of both ecosystems and public health. However, despite widespread complaints from the local population, this issue is ignored by both the oil companies and the government. The war in Iraq, caused by oil, has similarly devastated the ecosystem of the region. The violence resulting from the war not only causes physical destruction but also ecological harm. The efforts of the guide and the British couple in the Alps should also be assessed within the ecosystem discourse. As the guide points out, despite scientists' warnings about the melting of glaciers and global warming, by 2055, the world has reached a point of near extinction. The British couple's individual efforts, such as running their car on chicken fat and increasing paper consumption, have proven ineffective. This is because their primary goal of installing a wind turbine was rejected by a committee. In this context, within the

framework of ecosystem discourse, the film demonstrates that individual efforts alone will not be sufficient to save the world in the future.

Environmental justice is a discourse that advocates for the elimination of inequality in all forms, including in areas such as language, religion, race, and the environment. Within the framework of environmental justice discourse, one of the most prominent stories is again related to oil. In the Niger Delta, although the people living in the region are the rightful owners of the oil, they are among the most disadvantaged groups. Not only has their natural environment been destroyed due to oil extraction, but they have also faced severe economic decline. Furthermore, the region is grappling with serious health issues. The situation of Iraqi refugee children is similar. They have been displaced due to the loss of their living spaces as a result of oil-related activities. Additionally, Hurricane Katrina, triggered by oil extraction practices, led to the degradation of the natural environment and the displacement of people from their homes. All of these examples are key indicators of environmental injustice. This is because the destruction of ecosystems due to oil companies' activities directly impacts the lives of the people and wildlife in these regions. However, the companies that profit from this exploitation face no social, economic, or environmental repercussions.

Ecosocialism is a discourse that opposes capitalism and advocates for the protection of ecosystems. Within the framework of ecosocialism, the most striking elements in the film are the animated videos. These animations depict capitalism as a system designed for the benefit of only one group. The continuous desire of these groups to accumulate wealth is presented as one of the primary causes of ecosystem degradation. This is because the insatiable demand for consumption, and the resulting waste, harm the planet. Moreover, this situation suggests that, with the ever-increasing population, humans will soon exceed the planet's capacity to support life.

In conclusion, despite all these discourses, by 2055 the film presents the Earth as having become uninhabitable. However, the purpose of the film is to show that there is still something that can be done. As emphasized in the film, within the context of these discourses, both individual and collective action must be taken in a cooperative, scientifically-informed manner. As noted by the archivist at the beginning of the film, the phrase "we could have saved it, but we didn't" should be understood in light of the real possibility that this outcome could indeed come to pass.

Keywords: Environmental communication, Qualitative content analysis, Ecosystem discourse, Environmental justice discourse, Ecosocialism.

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Research Article | Araştırma Makalesi

Artificial Intelligence Enabled Climate Change Communication: The Role of ClimateGPT

Yapay Zekâ Destekli İklim Değişikliği İletişimi: ClimateGPT'nin Rolü

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Abstract

Climate change is one of the most important environmental problems humanity faces. To combat climate change, it is necessary first to understand the concept of climate change correctly and to know its negative effects and solution methods. Unfortunately, there is a problem in climate change communication between scientists and the public. Artificial intelligence (AI) can overcome this problem. The use of artificial intelligence in climate-related communication contributes to the increase in the effectiveness of communication. This study aims to explain the basic concepts of climate change to the public and students with the help of AI. For this purpose, ClimateGPT, an AI tool developed by Erasmus AI company, was used. ClimateGPT answered a series of questions about climate change, greenhouse effect and greenhouse gases, climate change effects, mitigation and adaptation measures, and finally climate communication. As a result of the study, ClimateGPT has been shown to produce mostly accurate and clear answers that everyone can understand. The AI-generated information can be used to educate the public about climate change. Therefore, this study contributes to the United Nations Sustainable Development Goal number 13: Climate Action.

Keywords: Artificial Intelligence, Climate Change, ClimateGPT, Communication.

Öz

İklim değişikliği insanlığın karşı karşıya olduğu en önemli çevre sorunlarından biridir. İklim değişikliğiyle mücadele edebilmek için öncelikle iklim değişikliği kavramını doğru anlamak, olumsuz etkilerini ve çözüm yöntemlerini bilmek gerekmektedir. Ne yazık ki bilim insanları ile toplum arasında iklim değişikliği iletişimde bir sorun bulunmaktadır. Yapay zekâ bu sorunun üstesinden gelebilir. Yapay zekanın iklimle ilgili iletişimde kullanılması iletişimin etkinliğinin artmasına katkı sağlamaktadır. Bu çalışma iklim değişikliğinin temel kavramlarını Yapay zekâ yardımıyla topluma ve öğrencilere anlatmayı amaçlamaktadır. Bu amaçla Erasmus AI firması tarafından geliştirilen bir yapay zekâ aracı olan ClimateGPT kullanılmıştır. ClimateGPT, iklim değişikliği, sera etkisi ve sera gazları, iklim değişikliğinin etkileri, azaltım ve uyum önlemleri ve son olarak iklim iletişimi konularında bir dizi soruyu yanıtladı. Çalışmanın sonucunda, ClimateGPT'nin herkesin anlayabileceği, büyük ölçüde doğru ve net cevaplar ürettiği görülmüştür. YZ tarafından üretilen bilgiler toplumu iklim değişikliği konusunda eğitmek için kullanılabilir. Bu nedenle bu çalışma Birleşmiş Milletler Sürdürülebilir Kalkınma Hedeflerinden 13 numaralı İklim Eylemi'ne katkıda bulunmaktadır.

Anahtar Kelimeler: Yapay Zekâ, İklim Değişikliği, ClimateGPT, İletişim.



Introduction

Climate change is a slow-motion catastrophe and one of the most important and the most complex environmental problems that humanity has to deal with (Chen et al., 2023; Daugaard et al., 2024; Lee et al., 2024; Ö. Zeydan et al., 2017). Although there has been a huge effort from climate scientists to warn about the impacts of climate change, the public, politicians, and decision-makers lack urgent responses. Obviously, there is a problem in climate change communication. Complex terminology (such as net zero, carbon emissions, etc.), lack of personality (failing to address the emotions of the audience), narrow focus (concentrating only on environmental issues), inadequate communication investment, and misinformation can be listed for reasons communication problems (Lee et al., 2024). Due to its multi-dimensional nature, it is difficult to explain climate change topics to the public or students (Duram, 2021). The communication between climate experts and the public is inadequate since individuals interpret information based on their cultural worldviews and pre-existing beliefs. Highlighting local impacts and community-based solutions can improve climate communication. For better climate communication, scientists should avoid using jargon and use clear and understandable language to explain complex scientific concepts to the general public. Visual aids and storytelling can also be effective tools to convey information (Cook & Overpeck, 2019). Artificial intelligence (AI) is important in terms of creating awareness in climate change communication. Artificial intelligence stands out as a strong supporter in terms of finding solutions to problems caused by climate change. It is possible to transmit information and solution suggestions about climate change to people much faster and more accurately. AI has the potential to increase the effectiveness of climate change communication by providing accurate and personalized information to individuals and communities. AI chatbots can be used to provide information about climate change and its impacts, as well as engage individuals in discussions about climate change and potential solutions (Debnath et al., 2023).

AI can play a crucial role in better climate change communications. There are several artificial intelligence applications for Climate Change. Some of them (ClimateAi - <https://climate.ai/>, ClimateIQ - <https://climateiq.org/>, and Climate Change AI - <https://www.climatechange.ai/>) are developed for business use and not for end users. Large Language Models are designed for question-answer tasks and can be easily applied by end users. Several researchers employed ChatGPT (<https://chatgpt.com/>) in climate change education (Glavinskis, 2023; Griffiths, 2023). ChatClimate (<https://www.chatclimate.ai/>) is another alternative trained by the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (AR6 IPCC) (Vaghefi et al., 2023). They reported that ChatClimate performed better than ChatGPT. This study differs from the cited literature. ClimateGPT (<https://climategpt.ai/>), an AI specifically trained for climate research, was used to create educational materials for effective climate change communication. ClimateGPT is not only trained by AR6 IPCC but also by Sustainable Development Goals (Thulke et al., 2024). The study examines the role of artificial intelligence tools in climate change communication. The purpose of this paper is to answer the following research question: Can AI-provided answers about climate change effectively bridge the gap between complex scientific information and public understanding? This paper explains the concept of climate change, its negative effects, and solution methods for the public and students using an artificial intelligence tool. In the next section, a review of the literature is provided about AI applications in climate change and climate communication. After that, artificial intelligence and large language models are mentioned, and the definition of ClimateGPT is given. In the Methods section, the usage procedure of ClimateGPT is

explained. The findings and analysis part provides prompts and ClimateGPT responses and their analysis. The final section briefly concludes with the study. The results of this study will contribute to climate change communication, to the knowledge level of the public and students, and to academic research on this subject.

1. Literature Review

AI shows the potential to improve and widen the existing insights into climate change, and it may play a crucial role in the effective reduction of the climate crisis. For example, AI can predict future global mean temperature and precipitation changes, foreseen extreme weather events, and other consequences (wildfires, droughts, etc.) of climate change. AI-based solutions can boost production while reducing greenhouse gas emissions in the industry (Cowls et al., 2023). Chen et al. (2023) evaluated the applications of AI in climate change mitigation. They suggested that AI has the potential to optimize energy systems. AI can predict energy demand and improve energy efficiency. The design of energy-efficient buildings, cities, infrastructure, and industrial processes can be achieved with artificial intelligence. Energy efficiency will significantly reduce fossil fuel consumption and greenhouse gas emissions (Chen et al., 2023). Rane et al. (2024) detailly investigated the implementation of ChatGPT in climate change mitigation. They stated that ChatGPT can identify appropriate locations of renewable energy resources and increase the efficiency of renewable energy systems. It may aid farmers in adopting climate-resilient and sustainable farming practices. In addition, ChatGPT may play a role in sustainable land use and forest conservation (Rane et al., 2024). AI can also be used in climate change adaptation such as monitoring meteorological data and developing warning systems for extreme weather events (Leal Filho et al., 2022).

Luccioni et al. (2021) developed an AI climate impact visualization tool to raise public awareness about climate change. This tool creates an image of climate change impact (storm, flood, and wildfire) in a given location. With the aid of this image, it is aimed to allow viewers to render the future climate impacts more easily (Luccioni et al., 2021). Similarly, Ramya et al. (2024) examined the use of AI for climate change visualization by focusing on increasing sea levels, deforestation, urban heat islands, and severe weather events. They mentioned that AI-driven climate change visualizations can raise public awareness so that new policies can be implemented and a sustainable future can be established (Ramya et al., 2024).

Artificial intelligence technology has already altered and has been altering education. AI can assist educators in several ways such as preparing course materials, monitoring the teaching process, evaluating assignments, and reducing the teacher workload. AI can help students in their learning process (Liu et al., 2021). Rane et al. (2024) mentioned that ChatGPT, an advanced language model, may be used to change human behavior by generating educational materials so that public awareness of climate change will increase. Griffiths (2023) used ChatGPT in climate change education. Similarly, another study implemented ChatGPT and reported that it left a lot out (Glavinskis, 2023). Vaghefi et al. (2023) enhanced the capabilities of ChatGPT-4 by utilizing the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC AR6). This new GPT-4 powered AI, called ChatClimate, provides climate change information accessible to a broader community. They reported that Hybrid ChatClimate and ChatClimate models outperformed ChatGPT (Vaghefi et al., 2023). ClimateGPT is another AI, specifically designed to help decision-makers about climate change. IPCC AR6, United Nations Sustainable Development Goals, and extreme weather events are implemented during

the training stage of ClimateGPT (Şeko, 2024). It can be though that specifically trained AI tools provide better climate change communication. Therefore, the hypothesis of this paper is constructed as follows:

H1: ClimateGPT provides correct and clear answers about climate change that can be easily understood by the public and students.

2. Artificial Intelligence (AI) and Large Language Models (LLMs)

Artificial intelligence is a computer or machine designed to mimic human intelligence and human behaviors such as thinking and feeling. In computer science, artificial intelligence is defined as intelligence demonstrated by a computer that performs human cognitive functions such as problem-solving (Pirim, 2006; İ. Zeydan, 2024a). The goal of artificial intelligence is to imitate human intelligence through computers. Artificial intelligence tries to understand the structure of intelligence by creating computer programs that control machines (Verma et al., 2021). Large Language Models (LLMs), the most advanced discipline of artificial intelligence systems, are groundbreaking systems in the field of artificial intelligence and natural language processing (İ. Zeydan, 2024b). These models use deep learning algorithms with billions of parameters and are trained on huge amounts of text data (He et al., 2021; Zhang & Soh, 2023). Large language models are capable of generating text, solving mathematical problems, answering questions, and programming (Vaghefi et al., 2023). The role of LLMs in the relationship between artificial intelligence and natural language processing is significant. These models have moved beyond previous technologies in understanding and producing human language, taking machine-human interaction to a whole new level. In addition, these models have accelerated AI research, deepened our scientific understanding of language understanding and production, and are seen as an important step toward artificial general intelligence (Keleş & Deniz, 2024; Zhang & Soh, 2023).

The contribution of LLMs to the scientific field is quite significant. The development of LLMs has not only affected academic research, but also transformed industrial applications, allowing companies to implement innovative solutions in areas such as customer service communication, content management, and data analysis. Researchers use LLMs to conduct literature reviews, interpret experimental results, and identify potential research gaps. In the social sciences, they contribute to identifying social trends by conducting large-scale text analyses. These developments accelerate the process of scientific discovery and enable researchers to conduct analyses at a scale and depth that was not previously possible (Thulke et al., 2024).

The role of LLMs in education cannot be underestimated. They are transforming education processes with their ability to provide personalized learning experiences, instant feedback, and detailed explanations on a variety of topics. LLMs can serve as virtual teacher assistants available to students 24/7, simplifying complex topics and allowing students to progress at their own pace. For teachers, LLMs provide support with tasks such as creating lesson plans, assessing student assignments, and preparing educational materials (Hwang et al., 2019; İşler & Kılıç, 2021).

The role of LLMs in communication is to transform communication processes by providing human-like interactions across various communication channels. In customer service, LLMs are used as 24/7 chatbots, understanding and answering complex queries and increasing customer satisfaction. In the business world, they are also used for tasks

such as answering emails, creating meeting summaries, and even facilitating multilingual communication. On social media platforms, LLMs are used to create personalized content. In translation services, they help overcome language barriers by providing context-sensitive and real-time translations. They also facilitate communication for individuals with disabilities, for example, by providing sign language translations or text-to-speech conversions (Vaghefi et al., 2023; Verendel, 2023).

3. ClimateGPT

GPT (Generative Pre-trained Transformer) is a series of natural language processing models developed by OpenAI that have revolutionized the field of LLM. Starting with GPT-1, which was first introduced in 2018, the series continued with GPT-2, GPT-3, and most recently GPT-4. Each new version was larger and more capable than the previous one. GPT models stand out for their ability to perform a wide range of natural language tasks: text generation, translation, summarization, question answering, and even simple coding tasks (Thulke et al., 2024; Urzedo et al., 2024).

ClimateGPT is an artificial intelligence language model focused on climate change. ClimateGPT is freely accessible at <https://climategpt.ai/> website (Figure 1). It was trained by Erasmus.AI. This model was developed to provide information on scientific data, answer questions, and perform specific analyses, especially on climate change, sustainability, and environmental impacts. ClimateGPT can inform researchers, policymakers, and businesspeople about climate change. The Sustainable Development Goals (SDGs) of the United Nations are included in the model. ClimateGPT gets its information from scientific articles. Extreme weather events in the last ten years, El Nino and La Nina effects, and the latest technologies have been added to the model. The verification of the answers given by ClimateGPT has been tested in cooperation with Georgetown University in the USA. The answers are correct by an average of 82% (Şeko, 2024). With the artificial intelligence tool ClimateGPT, it can more effectively explain the effects of climate change, adaptation methods, and climate change mitigation strategies. Therefore, it can tell what climate conditions will be like in the future.

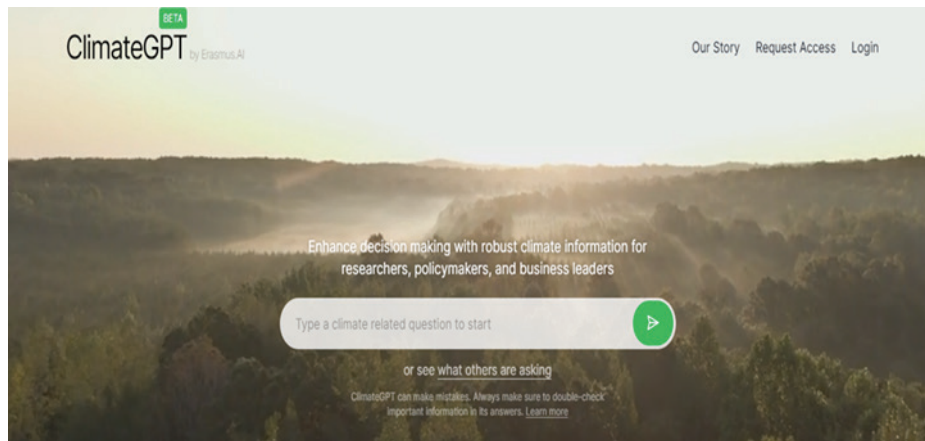


Figure 1. ClimateGPT user interface (<https://climategpt.ai/>).

4. Artificial Intelligence in Climate Communication

With the development of technology, interpersonal communication has been transformed into digital channels via e-mails, text messages, social media interactions, and video conferencing. Today, the introduction of AI presents a new era in communication (Hancock et al., 2020). Effective communication is vital for the success of any climate change

solution (Rane et al., 2024). Artificial intelligence has the potential to offer innovative solutions to current problems in climate communication. AI has the potential to increase the effectiveness of climate change communication in several ways. First, AI can provide individuals and communities with personalized and accurate information that can help build trust and engagement. Second, AI can analyze large amounts of data on climate change and its impacts, which can help identify trends and patterns that can inform climate change communication strategies. Third, AI can be used to engage individuals and communities in discussions about climate change and possible solutions, which can help build support for climate change action (Debnath et al., 2023; Vaghefi et al., 2023). The use of artificial intelligence in climate communication contributes to increasing the effectiveness of communication. Faster and more accurate information can be transferred to the public and students through artificial intelligence. ClimateGPT can provide support to academics in climate change education.

5. Methods

The method of the study is to detail the subject with the question and answer technique (prompts-answers). The effectiveness of analysis in artificial intelligence depends on the quality of the given commands (prompts). Users can get more accurate and faster answers by using correct, clear, and explanatory expressions. The requested information should be clearly stated and detailed information should be included in the inputs. Examples covering the desired results can be presented. In this study, questions were asked with consecutive prompts, and the prompts were renewed according to the given answers. It is important to ask knowledge-controlled questions when entering a prompt. Effective communication with AI allows AI to better understand us and produce appropriate responses (Cook & Overpeck, 2019; Sullivan & Fosso Wamba, 2024; Zhang & Soh, 2023).

ClimateGPT was asked to explain climate change to the public and students. New questions were asked based on the answers given by ClimateGPT and the subject was expanded. In this way, it will be possible to convey the concepts related to climate change accurately and completely. The questions asked are as follows:

1. Can you explain climate change?
2. Can you give information about the greenhouse effect and greenhouse gases?
3. Can you describe the effects of climate change?
4. What are the mitigation methods for climate change?
5. What are the adaptation measures for climate change?
6. What are the effects of climate change on communication?
7. How to develop climate change communication strategies using AI?

6. Findings and Analysis

Prompt-1: Can you explain climate change?

Answer-1: "Climate change is the long-term alteration of temperature and precipitation patterns in the Earth's climate system. It is primarily caused by human activities such as burning fossil fuels, deforestation, and industrial processes that release greenhouse gases into the atmosphere. These gases trap heat and cause the Earth's temperature to rise, leading to a range of environmental and social impacts.

The impacts of climate change are far-reaching and include rising sea levels, extreme weather events, and changes in ecosystems. These impacts can have significant consequences for human health, food security, and economic stability.

Addressing climate change requires a global effort to reduce greenhouse gas emissions and adapt to the impacts that are already occurring. This includes transitioning to renewable energy sources, improving energy efficiency, and implementing policies that promote sustainable development.

There is a growing awareness of the importance of addressing climate change, and many countries have made commitments to reduce their greenhouse gas emissions. However, there is still much work to be done to mitigate the impacts of climate change and build resilience to its effects.”

Prompt-2: Can you give information about the greenhouse effect and greenhouse gases?

Answer-2: “The greenhouse effect is a natural process that occurs in the Earth’s atmosphere. It happens when certain gases, known as greenhouse gases, trap heat from the sun and prevent it from escaping back into space. This trapped heat warms the Earth’s surface and keeps it at a livable temperature. Without greenhouse gases, the Earth would be too cold to support life.

The most common greenhouse gases are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). These gases are released into the atmosphere by human activities such as burning fossil fuels, deforestation, and agriculture. When these gases build up in the atmosphere, they trap more heat and cause the Earth’s temperature to rise. This is known as global warming.

The effects of global warming are already being felt around the world. Rising temperatures are causing more frequent and severe heat waves, droughts, floods, and storms. These events are disrupting ecosystems, harming wildlife, and threatening human health and safety.

To combat global warming, we need to reduce our emissions of greenhouse gases. This means transitioning to cleaner energy sources, conserving energy, and reducing our reliance on fossil fuels. It also means supporting policies that promote sustainable development and protect our natural resources.

In summary, the greenhouse effect is a natural process that helps keep the Earth warm and livable. However, human activities are causing the concentration of greenhouse gases to rise, leading to global warming and its associated impacts. To address this issue, we need to reduce our emissions of greenhouse gases and transition to cleaner energy sources.”

Prompt-3: Can you describe the effects of climate change?

Answer-3: “Climate change is the long-term alteration of temperature and precipitation patterns, in addition to changes in wind patterns, atmospheric humidity, and other atmospheric conditions that influence weather. Climate change has a wide range of effects on the environment, human health, and the economy.

One of the most noticeable effects of climate change is an increase in global temperatures. This has led to the melting of glaciers and ice caps, which has contributed to rising sea

levels. This, in turn, has led to coastal erosion, flooding, and the loss of habitats for many species.

Another effect of climate change is the alteration of precipitation patterns. Some regions are experiencing more intense and frequent rainfall, while others are experiencing prolonged droughts. This can lead to flooding, landslides, and other natural disasters.

Climate change can also affect human health. For example, rising temperatures can lead to heat-related illnesses, such as heatstroke and dehydration. Additionally, climate change can exacerbate existing health problems, such as respiratory illnesses and cardiovascular disease.

The economy is also affected by climate change. For example, extreme weather events can damage infrastructure, such as roads, bridges, and buildings. This can lead to increased costs for repairs and reconstruction. Additionally, climate change can affect agriculture, which can lead to food shortages and higher food prices.

In conclusion, climate change has a wide range of effects on the environment, human health, and the economy. It is important to take action to mitigate the effects of climate change, such as reducing greenhouse gas emissions and implementing sustainable practices.”

Prompt-4: What are the mitigation methods for climate change?

Answer-4: “Mitigation refers to the process of reducing or preventing the release of greenhouse gases into the atmosphere to limit the effects of climate change. There are several mitigation methods that can be used to combat climate change, including:

- Reducing energy consumption: This can be done by increasing energy efficiency, switching to renewable energy sources, and reducing the use of fossil fuels.
- Reforestation and afforestation: Planting trees and restoring forests can help to absorb carbon dioxide from the atmosphere.
- Improving agricultural practices: Improving agricultural practices can reduce greenhouse gas emissions and increase carbon sequestration.
- Implementing carbon pricing: This involves putting a price on carbon emissions to encourage individuals and businesses to reduce their carbon footprint.
- Developing low-carbon technologies: Developing low-carbon technologies such as electric vehicles, renewable energy sources, and energy-efficient buildings can help to reduce greenhouse gas emissions.
- Promoting sustainable land use: Promoting sustainable land use practices such as reforestation, afforestation, and sustainable agriculture can help to reduce greenhouse gas emissions and increase carbon sequestration.

These are just a few examples of the many mitigation methods that can be used to combat climate change. It is important to note that mitigation efforts must be combined with adaptation efforts to ensure that communities are prepared for the impacts of climate change.”

Prompt-5: What are the adaptation measures for climate change?

Answer-5: "Adaptation measures are actions taken to reduce the negative impacts of climate change. These measures can include a range of strategies, such as changing farming practices, building resilient infrastructure, and developing early warning systems.

For example, farmers may adapt by planting drought-tolerant crops, using efficient irrigation systems, and diversifying their crops. Governments may adapt by investing in resilient infrastructure, such as flood defenses and coastal protection. And communities may adapt by developing early warning systems for extreme weather events.

Adaptation measures are important because they help us to cope with the impacts of climate change, such as rising sea levels, extreme weather events, and food and water scarcity. Without adaptation measures, the negative impacts of climate change are expected to worsen over time.

There are many different types of adaptation measures, and they can be implemented at different scales, from individual farms to entire countries. Some adaptation measures are more effective than others, and the most effective measures will depend on the specific context and the needs of the community or region.

Overall, adaptation measures are essential for building resilience to climate change and reducing the negative impacts on people, ecosystems, and economies."

Prompt-6: What are the effects of climate change on communication?

Answer-6: "Climate change can have significant effects on communication, both in terms of the content of the messages and the channels used to deliver them. Here are some of the key effects:

- Increased urgency: Climate change is a long-term problem with short-term consequences. This creates a sense of urgency that can make it difficult to communicate complex information in a way that is easily understood.
- Changing audiences: As climate change impacts more people, the audience for climate change communication is becoming more diverse. This means that messages need to be tailored to different groups and may need to be delivered in different ways.
- Disbelief and skepticism: Climate change is a complex issue with scientific evidence that is often difficult to understand. This can lead to skepticism and disbelief, which can make it difficult to communicate effectively.
- Political polarization: Climate change is a highly politicized issue, which can make it difficult to communicate across political lines.
- Increased competition for attention: With so many messages competing for attention, it can be difficult to get people to pay attention to climate change messages.

Overall, climate change presents significant challenges to effective communication. However, there are strategies that can be used to overcome these challenges and communicate effectively about climate change."

Prompt-7: How to develop climate change communication strategies using AI?

Answer-7: "Developing climate change communication strategies using artificial intelligence (AI) involves several steps and considerations. Firstly, it is important to understand the target audience and their needs, as well as the goals of the communication strategy. AI can be used to analyze large amounts of data and provide insights into

audience behavior and preferences. Secondly, AI can be used to create personalized messages and content that are tailored to the specific needs and interests of the audience. For example, AI-powered chatbots can be used to provide real-time information and answer questions about climate change. Thirdly, AI can be used to enhance the credibility and trustworthiness of climate change information by providing accurate and up-to-date data and analysis. Finally, AI can be used to measure the effectiveness of climate change communication strategies and make adjustments.”

In the first answer, ClimateGPT provided the physical basis of climate change. It mentioned the greenhouse gas emissions that trap the heat, and the Earth is warming. ClimateGPT also stated the consequences of climate change, reduction, and adaptation measures. Therefore, in the second question, the greenhouse effect and gases are asked. ClimateGPT produced only wrong information about the source of trapped heat. A similar false result was also reported by Glavinskas (2023). ClimateGPT produced only wrong information about the source of trapped heat. A similar false result was also reported by Glavinskas (2023). In the following questions, the impacts of climate change, mitigation, and adaptation methods are asked. The last prompt was about the effects of climate change on communication. ClimateGPT has been shown to produce mostly accurate and clear answers. The answers are provided in simple language so that everyone can understand. Therefore, H1 is accepted. It is obvious that ClimateGPT can provide support to academics and students in climate change education. Checking results before using them is advisable since no artificial intelligence produces 100% correct answers. Item 13 of the Sustainable Development Goals is about “Climate Action”. Sustainable Development Goal target 13.3 states that “Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning”. The AI-generated information in this study can be used to educate the public about climate change. Therefore, this paper contributes to SDG number 13.

Conclusion

Artificial intelligence is changing the world in ways never seen before. The literature has shown that AI has been used in climate change-related research. AI can help improve climate change communication by making it more personal and engaging. For example, AI-powered personalization algorithms can analyze a user’s behavior and preferences to provide them with information that is relevant to them. Additionally, AI-generated images and videos can make climate change information more visually appealing and engaging. AI can also help improve communication by making it more accessible. For example, AI-powered translation tools can make climate change information available in multiple languages, making it more accessible to people around the world.

This study used ClimateGPT, an artificial intelligence tool, to make complex concepts related to climate change understandable to everyone. Artificial intelligence has the potential to revolutionize climate communication by making complex information more understandable and accessible. ClimateGPT has contributed to climate communication by answering questions about climate change and explaining them in a simple way to the public and students. ClimateGPT has been trained with up-to-date information on climate change and continues to be trained with even more information. This information is then used to contribute to climate policy and informed decision-making processes. By using AI in communication, we can build a more sustainable and climate-resilient future. Ultimately, using AI in climate communication can help address the challenges and urgency of communicating complex scientific information. At the same time, by harnessing

the power of AI, we can improve the accuracy, personalization, and accessibility of climate change information, making it more effective in educating people about the issue and inspiring them to act. This study contributes to the Sustainable Development Goal number 13: The Climate Action.

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Artificial Intelligence Enabled Climate Change Communication: The Role of ClimateGPT

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Extended Abstract

Climate change is one of the most important environmental problems humanity faces. To combat climate change, it is necessary first to understand the concept of climate change correctly and to know its negative effects and solution methods. Although there has been a huge effort from climate scientists to warn about the impacts of climate change, the public, politicians, and decision-makers lack urgent responses. Unfortunately, there is a problem in climate change communication between scientists and the public. Complex terminology (such as net zero, carbon emissions, etc.), lack of personality (failing to address the emotions of the audience), narrow focus (concentrating only on environmental issues), inadequate communication investment, and misinformation can be listed for reasons communication problems. Artificial intelligence (AI) can overcome this problem. AI has the potential to increase the effectiveness of climate change communication by providing accurate and personalized information to individuals and communities. The use of artificial intelligence in climate-related communication contributes to the increase in the effectiveness of communication.

AI shows the potential to improve and widen the existing insights into climate change, and it may play a crucial role in the effective reduction of the climate crisis. For example, AI can predict future global mean temperature and precipitation changes, foreseen extreme weather events, and other consequences (wildfires, droughts, etc.) of climate change. AI-based solutions can boost production while reducing greenhouse gas emissions in the industry. AI has the potential to optimize energy systems. AI can predict energy demand and improve energy efficiency. The design of energy-efficient buildings, cities, infrastructure, and industrial processes can be achieved with artificial intelligence. Energy efficiency will significantly reduce fossil fuel consumption and greenhouse gas emissions. AI can identify appropriate locations of renewable energy resources and increase the efficiency of renewable energy systems. It may aid farmers in adopting climate-resilient and sustainable farming practices. AI can also be used in climate change adaptation such as monitoring meteorological data and developing warning systems for extreme weather events. AI-driven climate change visualizations can raise public awareness so that new policies can be implemented, and a sustainable future can be established.

Artificial intelligence is a computer or machine designed to mimic human intelligence and human behaviors such as thinking and feeling. In computer science, artificial intelligence is defined as intelligence demonstrated by a computer that performs human cognitive functions. Large Language Models (LLMs), the most advanced discipline of artificial intelligence systems, are groundbreaking systems in the field of artificial intelligence and natural language processing. These models use deep learning algorithms with billions of parameters and are trained on huge amounts of text data. Large language models are capable of generating text, solving mathematical problems, answering questions, and programming. Researchers use LLMs to conduct literature reviews, interpret experimental results, and identify potential research gaps. In the social sciences, they contribute to identifying social trends by conducting large-scale text analyses. The role of LLMs in education

cannot be underestimated. They are transforming education processes with their ability to provide personalized learning experiences, instant feedback, and detailed explanations on a variety of topics. LLMs can serve as virtual teacher assistants available to students 24/7, simplifying complex topics and allowing students to progress at their own pace. For teachers, LLMs provide support with tasks such as creating lesson plans, assessing student assignments, and preparing educational materials. The role of LLMs in communication is to transform communication processes by providing human-like interactions across various communication channels. Today, the introduction of AI presents a new era in communication. AI has the potential to increase the effectiveness of climate change communication in several ways. First, AI can provide individuals and communities with personalized and accurate information that can help build trust and engagement. Second, AI can analyze large amounts of data on climate change and its impacts, which can help identify trends and patterns that can inform climate change communication strategies. Third, AI can be used to engage individuals and communities in discussions about climate change and possible solutions, which can help build support for climate change action.

This study aims to explain the basic concepts of climate change to the public and students with the help of AI. For this purpose, ClimateGPT, an AI tool developed by Erasmus AI company, was used. ClimateGPT was developed to provide information on scientific data, answer questions, and perform specific analyses, especially on climate change, sustainability, and environmental impacts. It can be thought that specifically trained AI tools provide better climate change communication. Therefore, the hypothesis of this paper is constructed as follows:

H_1 : ClimateGPT provides correct and clear answers about climate change that can be easily understood by the public and students.

ClimateGPT answered a series of questions about climate change, greenhouse effect and greenhouse gases, climate change effects, mitigation and adaptation measures, climate communication, and finally communication strategies. ClimateGPT has been shown to produce mostly accurate and clear answers. The answers are provided in simple language. The expert indicated that ClimateGPT produced only one wrong answer, and the majority of the answers were correct. Checking results before using them is advisable since no artificial intelligence produces 100% correct answers. As a result of the study, ClimateGPT has been shown to produce mostly accurate and clear answers that everyone can understand. Therefore, H_1 is accepted. The AI-generated information can be used to educate the public about climate change. Sustainable Development Goal target 13.3 states that "Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning". The AI-generated information in this study can be used to educate the public about climate change. Therefore, this paper contributes to SDG number 13.

Keywords: Artificial Intelligence, Climate Change, ClimateGPT, Communication.

Bu makale **intihal tespit yazılımlarıyla** taranmıştır. İntihal tespit edilmemiştir.

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Review Article | Derleme Makale Çeviri

Digitalization and Sustainability Conflict in Society: Waste Culture and Green Consciousness Toplumda Dijitalleşme ve Sürdürülebilirlik Çatışması: İsrar Kültürü ve Yeşil Bilinç



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Abstract

Sustainability, which is based on the protection of the resources we have within the framework of the global climate crisis, is gaining importance day by day. With the industrial revolution, we see that the daily lives of individuals have become integrated with technology. It is seen that all institutions of society, from communication to economy, from education to politics, have become connected to technology and networks. Thus, the concepts of increasing digitalization and sustainability have become synonymous with each other. In this article, the relationship between the two concepts will be analyzed in a social and environmental context, and their positive and negative aspects will be discussed. This study aims to understand and evaluate the conflict between wasteful culture and green consciousness by addressing the societal implications in the relationship between digitalization and sustainability. By examining how digital technologies have the potential to provide environmental benefits but also how they affect environmental threats such as e-waste, the study aims to reveal the societal consequences arising from this dilemma. Thus, the main question of the research will be tried to be answered whether digitalization provides environmental benefits in line with sustainability goals or deepens the e-waste crisis by triggering a culture of waste. In the research, a literature review will be conducted from qualitative research methods. As a result, inferences will be made on the future potential of sustainable digital technologies by drawing attention to the awareness of the balance between digitalization and green consciousness.

Keywords: Digitalization, Sustainability, Waste Culture, Green Consciousness, E-waste.

Öz

Günümüzde küresel iklim krizi çerçevesinde sahip olduğumuz kaynakların korunmasına dayanan sürdürülebilirlik gün geçtikçe önem kazanmaktadır. Endüstri devrimi ile birlikte bireylerin günlük hayatlarının teknolojiye entegre bir vaziyet aldığını görmekteyiz. İletişimden ekonomiye, eğitimden politikalara kadar toplumun tüm kurumlarının teknoloji ve ağına bağlı hale geldiği görülmektedir. Böylece gün geçtikçe artan dijitalleşme ile sürdürülebilirlik kavramları birbiri ile anılmaya başlanmıştır. Makalede iki kavram arasındaki ilişki toplumsal ve çevresel bağlamda ele alınarak olumlu ve olumsuz tarafları analiz edilecektir. Bu çalışma, dijitalleşme ve sürdürülebilirlik arasındaki ilişkide toplumsal etkileri ele alarak, israf kültürü ile yeşil bilinç arasındaki çatışmayı anlamayı ve değerlendirmeyi amaçlamaktadır. Çalışma, dijital teknolojilerin çevresel fayda sağlama potansiyelini buna karşın e-atık gibi çevresel tehditleri nasıl etkilediğini inceleyerek bu ikilemden doğan toplumsal sonuçları ortaya koymayı hedeflemektedir. Böylece araştırmada dijitalleşme, sürdürülebilirlik hedefleri doğrultusunda çevresel faydalar sağlıyor mu yoksa israf kültürünü tetikleyerek e-atık krizini mi derinleştiriyor temel sorusu yanıtlanmaya çalışılacaktır. Araştırmada nitel araştırma yöntemlerinden literatür taraması yapılacaktır. Sonuç olarak dijitalleşme ve yeşil bilinç arasında denge kurulmasına yönelik farkındalığa dikkat çekilerek sürdürülebilir dijital teknolojilerin gelecekteki potansiyeli üzerine çıkarımlar yapılacaktır.

Anahtar Kelimeler: Dijitalleşme, Sürdürülebilirlik, İsrar Kültürü, Yeşil Bilinç, E-atık.



Introduction

After the industrial revolution, digital transformation is increasing its impact day by day. Today, digital technologies are actively used at the social, economic, political and environmental levels. With Industry 4.0, there have been great changes from medicine to education, from transportation to production. As a result of this rapid change, society has separated from traditional lifestyles and brought about economic, environmental and social changes, leading to the birth and development of the concept of sustainability. In our country, awareness of the concept of sustainability in terms of not wasting resources and recycling has been an underlined element that both non-governmental organizations' projects and studies on socio-economic and environmental practices and businesses address within the framework of competitive advantage and legal regulations. At this point, digitalization has become one of the most important elements for the institutions of society. In terms of continuity, i.e. sustainability, digitalization plays a key role at the socio-economic and environmental level (Koçoğlu Sazkaya, 2019).

Today, drought, floods, forest fires, food and water shortages threaten society. The climate crisis, which affects conflicts and migration movements in social terms, continues to exist as a problem waiting for a solution and permanent solutions need to be produced.

Sustainability is a holistic approach that covers not only the environment but also socio-economic levels. It is a concept that embodies the idea of social equality and justice, economic prosperity and a peaceful society in a clean natural environment.

Today, digitalization is increasing day by day. Technological developments affect all segments of society and cause rapid change. This rapid diffusion of information technologies has radically changed everyday life in society, from individuals to institutions and governments. The fundamental institutions of society, such as education, economy and politics, are also integrated into this change.

Digital transformation is important for achieving the goals of sustainability. Sustainability covers a wide range of issues such as access to clean water, poverty, gender equality, biodiversity, economy, climate change mitigation (Tekdemir & Çakmakoglu, 2024). Digital transformation can be defined by the fusion of advanced technologies, the integration of physical and digital systems, innovative business models, and the creation of smart products and services. A comprehensive set of regulatory and normative frameworks, physical infrastructure and systems need to be built during the digital transformation process in order to avoid the potential disadvantages as well as the benefits of digitalization in terms of sustainability.

Digitalization and sustainability is a holistic transformation process that includes economic, social and environmental dimensions under the 2030 Agenda for Sustainable Development. Digital technologies have the potential to increase energy efficiency, optimize resource use and promote sustainable production processes. This process plays a critical role in environmental protection and combating climate change, while also addressing social inequalities and promoting inclusive economic growth. While digitalization offers innovative solutions to achieve sustainable development goals, it must be integrated with practices such as natural resource conservation, low-carbon production and circular economy (UN, 2015).

At the same time, the relationship between digitalization and sustainability should be considered in the context of the transformation that data flows create in economic,

environmental, and social dimensions. While the digital economy contributes to economic growth by increasing productivity through data-centric technologies, it also affects critical elements of environmental sustainability such as energy consumption, carbon emissions, and resource use. In order to minimize the environmental impacts of digitalization, it is necessary to develop global data management policies, support green digital infrastructure, and regulate data flows between countries in a fair and sustainable framework. In this context, aligning digitalization with sustainable development goals is a critical requirement to reduce environmental impacts and distribute data-centric economic opportunities more fairly (UNCTAD, 2021).

The relationship between digitalization and sustainability, particularly in the context of labor markets and economic transformation, is based on the potential of digital technologies to increase economic diversification, raise productivity and accelerate green transformation (European Parliament, 2021). While digitalization offers opportunities for emerging economies to leapfrog and transition to advanced technology, it also risks transforming the labor market and increasing social inequalities. As new employment models emerge through digital platforms, policies such as data privacy, access to digital infrastructure and support for vulnerable groups in the labour market need to be developed to ensure that these processes are fair and sustainable (ILO, 2020). Automation based on new technologies so that tasks previously performed by labor are taken over by machines (Acemoğlu & Restrepo, 2019).

Digitalization and sustainability are complementary processes in the context of reducing environmental impacts and increasing resource efficiency. The European Green Deal highlights the potential of digital technologies to increase energy efficiency and reduce carbon emissions, optimize industrial processes and support circular economy practices. While digital transformation offers innovative solutions to achieve sustainable development goals, it requires a focus on data management, smart energy systems and low-carbon production processes to ensure environmental sustainability. In this context, digitalization and environmental sustainability play a critical role in combating climate change and efficient use of resources (European Commission., 2019).

The integration of social institutions with digitalization increases the importance of the issue. Digitalization has the potential to be both a means and an end in terms of sustainability. Research Questions

1. To what extent does digitalization contribute to sustainability goals?
2. What are the impacts of electronic waste and consumption habits on sustainability?

This article aims to provide a comprehensive analysis of the relationship between digitalization and sustainability by addressing the above questions. This study uses the literature review technique, one of the qualitative research methods, to address the relationship between digitalization and sustainability with its social, environmental, and economic dimensions. The literature review was conducted through academic sources, reports, documents of international organizations, and current scientific publications on the subject. In the research, the effects of digital technologies on sustainable development goals, waste culture and e-waste problems, and efforts to create green consciousness were evaluated with a multidisciplinary approach. In this context, variables such as the environmental impacts of information and communication technologies, energy consumption, natural resource use, and digital inequality were analyzed in a holistic framework.

In the data collection process, studies published in the last five years were prioritized; thus, a comprehensive assessment was made taking into account current developments. In line with the purpose of the study, a conceptual framework was created, theoretical approaches and empirical findings were synthesized, and a critical view of the digitalization-sustainability relationship was presented. The findings obtained through this method contribute to an in-depth examination of the issue from a social sciences perspective.

1. Environmental Impacts of Digitalization

Westerman defined digital transformation as the adoption and sublimation of technology to replace manual processes with digital processes (Westerman vd., 2011). In another definition, digital transformation is classified as technological, organizational and social change. (Van Veldhoven & Vanthienen, 2022). In addition, it is seen as a tool for improving social welfare, spreading digital culture and increasing productivity.

Digitalization has positive and advantageous aspects as well as disadvantages. These include reduced economic income of individuals whose workforce is provided by digital technologies, digital privacy, data leakage, cyber-attacks, manipulation, addictive online platforms (Tekdemir & Çakmakoglu, 2024).

With the industrial revolution, our approach to nature and the environment has transformed, leading to the emergence of the concept of sustainability on a social basis. Today, digitalization and sustainability are two important concepts that are becoming more and more intertwined. Digital technologies have become an indispensable part of individuals, institutions and organizations day by day. Especially in terms of resource efficiency, carbon footprint, innovation and innovation, circular economy and social sustainability, digitalization plays an important role in achieving sustainability goals.

With Industry 4.0 and sustainable production, the issue of how to increase efficiency in production processes with smart factories and artificial intelligence and how to improve waste management is gaining importance day by day. In addition, the impact of e-commerce on sustainability through digital platforms, the environmental impacts of e-commerce, and the impact of remote working and virtual meetings on sustainability, which are becoming more and more established in the economic world, are emerging as a current issue.

The concept of sustainability has become more prominent within the framework of demographic changes and transformations that have occurred with industrialization. In modern society, problems such as population growth and limited resources have brought sustainability to the center of discussions due to the dangers it may pose in meeting the needs of future generations.

Digitalization contributes to sustainability with its features such as the development of interest and communication technologies, increase in the volume and structure of information, rapid transmission of information and provision of information. While it is possible to claim that sustainability and digitalization have a positive relationship, there are also negative aspects.

It is claimed that the relationship between digitalization and sustainability and its future is not yet fully known (Seele & Lock, 2017). Ya'u, emphasized that informatics and communication technologies in particular can be detrimental to sustainability as

they are a precursor to social inequality (Ya'u, 2004). Digitalization by contrast, digital technologies in the form of e-healthcare, robotics or emission reduction solutions can help individuals, organizations and nations achieve a more sustainable planet in light of sustainable development goals (Seele & Lock, 2017).

The role of digital technologies in supporting environmental sustainability can be considered from many angles. Advances in artificial intelligence (AI) can enable more efficient use of resources. For example, AI can be put to work in areas such as optimizing energy grids and managing logistics networks with less carbon emissions. The Internet of Things (IoT), one of the developments in the field of digitalization, is also one of the technologies that can support sustainability. IoT devices can work to increase sustainability through sensors and connected systems that optimize the use of energy, water, and raw materials. For example, smart thermostats can reduce energy use (Chou, 2019). Big data and data analytics can be used to predict environmental trends and calculate and reduce carbon emissions. One of the most important technologies that support sustainability from an environmental perspective is renewable energy systems. Renewable energy sources such as solar panels and wind turbines can be made much more efficient by integrating them with digital monitoring and management prompts.

2. Social Waste Culture and Green Consciousness

In our age where digitalization is accelerating day by day, the consumption habits of societies are changing and transforming. Within the framework of this transformation, new forms of waste culture have emerged on the one hand, while efforts to develop green consciousness have increased on the other (Islam vd., 2024). Especially the rapid renewal and short life span of electronic devices has created a new waste culture with the spread of digitalization. The problem of electronic waste (e-waste) shows that waste is not only an individual problem, but also an environmental problem in a global framework. In addition, the opportunities offered by online shopping in terms of wastage in consumption culture cause waste by increasing the speed of consumption (Gammoh vd., 2019).

Green consciousness refers to the efforts of individuals to change their consumption habits and adopt more environmentally friendly lifestyles in line with environmental sustainability. In this context, raising green consciousness in society is critical for achieving sustainability goals. Education and awareness campaigns in particular help individuals understand their environmental impact (Schultz, 2002). In addition, increasing demand for green technologies supports the sustainable production and consumption cycle.

In this context, the relationship between digitalization and sustainability is a dilemma. While digital technologies contribute to sustainability goals, they also create new problems that threaten these goals. The environmental impacts of digitalization lead to different perceptions in society. On the one hand, digital technologies contribute to sustainability goals such as energy efficiency and reduction of carbon emissions. On the other hand, the production and use processes of these technologies can deepen environmental problems. Public awareness of these dual impacts of digitalization plays an important role in the success of sustainability policies (Sharma & Dash, 2022). Social media platforms, on the other hand, play a contradictory role by being an effective tool for disseminating sustainability messages while at the same time promoting consumer culture (Bohnsack vd., 2021)2021.

The energy use of digitalization is an important concept in terms of green digitalization. Data centers, servers, and cloud computing systems are technologies that require large amounts of energy. This energy consumption can have negative impacts on the environment. At this point, the transition to renewable energy sources is important. One of the most important aspects of digitalization is electronic waste (e-waste) management. The short lifespan of most digital technologies increases the amount of e-waste (SPREP, 2020). It is very important to manage this waste in a sustainable way. It is critical and important to recycle the waste of these devices or to produce devices with longer lifespans (Bener & Babaoğlu, 2008). In the relationship between digitalization and the environment, efforts to reduce the carbon footprint attract attention. There are measures to reduce the carbon footprint of technology companies. For example, it can be considered an important step for large technology companies to feed their data centers with renewable energy sources and to become carbon neutral. Smart cities also play an important role in sustainability in digitalization (Butler & Lochow, 2016). In terms of sustainable urban development, issues such as smart grids, smart transportation systems and sustainable infrastructure are supportive in terms of solutions.

Within the framework of green environmental consciousness, green digitalization policies should be encouraged and developed by countries and international organizations. Various standards and regulations should be implemented to optimize the energy use of data centers. It is seen here that not all countries have equal opportunities in terms of access and use of technology. In order to achieve sustainable development goals on an environmental basis, a number of inclusive strategies need to be developed.

3. Social Dimensions of the Conflict between Digitalization and Sustainability

Digitalization has the potential to affect fundamental paradigms at the social scale, the consequences of which have not yet been sufficiently examined. With globalization increasing day by day, digitalization has reached global dimensions. This situation is becoming increasingly intricate at the economic, environmental, and social levels (Himmetoğlu, 2023). The waves of the digital revolution have brought sustainability to the forefront, focusing on finding new ways to manage natural resources. While digital transformation brings many positive changes, it also causes social transformation. It leads to social polarization and marginalization, as well as the weakening of social organizations through the flexibilization of business networks and labor (Komarčević, & Čelik, 2017).

The first wave of digital transformation is based on five core technologies: mobile systems, big data, cloud systems, social networks, and the internet of things. The second wave of transformation is the fourth industrial revolution, dominated by robots, drones, artificial intelligence, 3D printing, and energy storage Technologies (BTK, 2024).

After the Second World War, overpopulation, overuse of natural resources and the fear of nuclear war overshadowed the future. This environmental awakening in the 1960s led to ideas and laws to protect and save humanity and nature (Paul vd., 2018). The global sustainability paradigm seeks to demonstrate a strong capacity to transform our unsustainable world by establishing goals, strategies, and agendas for implementation (Mårald & Priebe, 2021). The current paradigm is tied to its historical background and sees the sustainability transformation as determined by liberal market solutions with global access to advanced science and technology and its success through state and global institutions (Wainwright & Mann, 2018).

Digitalization is transforming economic activity, affecting value chains, skill requirements, production methods, and the processes that support trade (Pollitzer, 2019). In this respect, sustainability can be characterized as a purpose and facilitator of trade, enabling more efficient use of resources, increased production capacity, compliance with environmental regulations, and the promotion of human rights (Tjoa & Tjoa, 2016). In terms of sustainability, trade in digital technologies works in the same way for developing countries in that it boosts their economic growth and thereby contributes directly to poverty reduction by creating new employment opportunities and lowering the prices of goods and services for poor consumers, including foodstuffs (World Trade Organization, 2018).

The relationship between sustainability and digitalization can be considered in economic, social and environmental contexts. Sustainability in the economic sense requires a system that does not harm agricultural and industrial production and that there are no sectoral imbalances. Social sustainability means that the system ensures equality in distribution, adequate provision of social services (health, education, etc.), gender equality and democracy.

Economic sustainability can be seen as efficient resource allocation and management. The most important issue here is related to the concept of natural capital. The earth, soil, atmosphere, all natural resources of the planet and environmental services are natural capital resources. Sustainability can be operationalized in terms of conservation of natural capital.

From an ecological perspective, sustainability should include limits on population and consumption levels. These limits apply to all biological systems. While humans may seem to escape them for a while, they ultimately have to accept the limits of a finite planet. Sustainability is more than limiting population or restricting consumption. It means that we must focus our choice of goods and technologies on the requirements of ecosystem integrity and species diversity.

An ecological economic approach requires the allocation of resources in a way that does not threaten either the system as a whole or its key components. For the system to be sustainable, it must itself serve the goals of sustainable consumption and production. If the current preferences and technologies perpetuated and sanctified in the concept of consumer sovereignty are not sustainable, then the system as a whole will be unstable. Appropriate policy instruments to address these concerns are varied and complex (Common & Perrings, 2017). What is important is that the ecological economics of sustainability prioritizes the needs of the system over the needs of individuals. It is clear that economics and ecology need to be integrated, and this can only be done with the help of the third element of the sustainability triad: the social perspective. If we cannot rely on unregulated markets to solve our problems, we must turn to conscious social action.

Digitalization is one of the most prominent and rapid change processes in the modern world, leading to radical transformations in economic, social and environmental areas (Ciocoiu, 2011). The proliferation of the internet, the rapid development of mobile devices and artificial intelligence applications are reshaping the way societies live, do business and practice environmental management. However, in addition to these advantages, digital technologies also have significant negative impacts that need to be considered in terms of environmental sustainability (Yakel vd., 2011). These include high energy consumption, electronic waste (e-waste), digital carbon footprint, overuse of raw

materials and natural resources, degradation of natural ecosystems due to digitalization, and social-environmental justice issues.

In terms of high energy consumption, energy consumption of data centers and cryptocurrency mining are two main important issues (Elbir Mermer & Kurtulgan, 2024). One of the biggest negative impacts of digitalization is that data centers in particular consume large amounts of energy. Activities such as cryptocurrency mining and bitcoin mining consume large amounts of electricity and contribute to carbon emissions (Sezgin, 2024).

Electronic waste (e-waste) is an increasing environmental threat. Millions of tons of electronic devices are discarded every year, and a large proportion of them cannot be recycled. In the process, mismanagement of e-waste can lead to leaching of harmful chemicals into soil and water (Rasnan vd., 2016). The short lifespan of digital devices leads to the generation of large amounts of electronic waste. The complex structure of electronic devices can make recycling processes difficult. In addition, the use of rare minerals in the making of digital devices can lead to environmental destruction.

Digitalization has a large carbon footprint. Besides data centers, internet networks, devices and software systems can also cause significant carbon emissions. For example, online video streaming platforms contribute to carbon emissions due to their high bandwidth and energy requirements. In addition, the deployment of 5G may increase energy consumption. The establishment of infrastructures in the installation processes of this technology increases energy needs (Kuvvetli Yavaş, 2024).

With the spread of digitalization, excessive use of raw materials and natural resources opens the door to environmental problems. Natural resources such as rare earth elements, cobalt and lithium are used in the production of digital devices and technologies. the use of these minerals can harm the environment and result in unsustainable resource use (Melville, 2010).

With the digitalization of the natural ecosystem, data centers, fiber optic cables and other infrastructure systems need to be developed. This often leads to ecosystem degradation. In particular, large tracts of land where data centers are built can replace agricultural areas or wildlife.

At the national level, there are aspects of digitalization that raise concerns in terms of social and environmental justice. The uneven spread of digitalization in some circles can lead to problems of environmental injustice. The environmental benefits of digitalization may not be felt sufficiently in some regions due to the digital divide. Developing countries are struggling to cope with environmental damage while reaping the benefits of digitalization.

Consequently, the potential of digitalization to deepen social inequalities and environmental injustices, as well as its positive effects on economic growth and social transformation, should not be ignored; therefore, it is essential that digital transformation processes are designed in an integrated and fair manner with sustainability principles.

Conclusion

Digitalization is a multi-dimensional transformation process that presents both opportunities and threats in the process of achieving sustainability goals. In this context, digital technologies offer environmental benefits as well as threats to sustainability such

as energy consumption, an increase in the amount of electronic waste, and overuse of natural resources. Managing this duality is possible not only through technological innovations but also through social awareness, policymaking, and individual responsibility. Minimizing the environmental impacts of digitalization is directly related to raising green consciousness and promoting sustainable digital technologies.

There is a need for multi-stakeholder and holistic policies to better manage the relationship between digitalization and sustainability in the future. These policies should include not only environmental but also economic and social dimensions. Closing the digital divide in developing countries, promoting environmentally friendly production and consumption patterns, and establishing a global framework for electronic waste management are key steps to ensure the sustainability of this process. In addition, the responsibilities of technology companies such as transparent data management, carbon footprint reduction targets, and long-lasting product design are also important.

At this point, aligning digitalization with sustainability principles should be supported not only by environmental policies but also by the inclusion of concepts such as environmental awareness and digital ethics in education systems. Environmental education and digital literacy programs covering all segments of society play a critical role in transforming individuals' consumption habits. In this way, it may be possible to build a lifestyle that is compatible with technology but at the same time environmentally friendly.

Within the framework of the two main research questions addressed in this study, the relationship between digitalization and sustainability has been evaluated multidimensionally. Firstly, in the context of the contribution of digitalization to sustainability goals, it is seen that digital technologies make positive contributions, especially in areas such as energy efficiency, carbon emission reduction, resource management, and environmental monitoring. Technologies such as artificial intelligence, the internet of things, and big data analytics offer innovative solutions for environmental sustainability. However, the transformation of these contributions into sustainable results is only possible if these technologies are applied in an ethical, fair, and environmentally friendly manner.

The second research question posits that the problem of electronic waste triggered by digitalization and rapidly changing consumption habits poses serious threats to sustainability. The short-lived design of digital devices, planned obsolescence strategies, and the cycle of constant renewal lead to both the overuse of natural resources and the increase in harmful waste that is difficult to recycle. This, combined with the digital reproduction of consumer culture, increases the environmental burden and threatens the ecological balance.

In addition, it covers the potential of individuals and societies to develop green consciousness and the strategies that policymakers can implement. In this context, increasing the demand for green technologies, expanding environmental education programs, and integrating digital literacy with environmental ethics stand out as important steps. At the same time, policy recommendations such as managing electronic waste, extending device lifespans, and supporting digitalization processes with renewable energy sources will be effective in preventing a culture of waste. All these assessments reveal that digital transformation should be carried out in line with sustainability principles and that this process should include not only technological but also social and environmental dimensions.

Consequently, integrating the digital transformation process with sustainable development should be considered a strategic priority in tackling the global climate crisis. Developing a green digitalization perspective will not only mitigate environmental crises but also contribute to laying the foundations for a just, inclusive, and resilient societal structure.

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Digitalization and Sustainability Conflict in Society: Waste Culture and Green Consciousness

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Extended Abstract

Digital transformation, which has increased its impact since the Industrial Revolution, has led to radical changes in social, economic and environmental areas with Industry 4.0. The widespread use of digital technologies has supported the development of the concept of sustainability in societies moving away from traditional lifestyles. Especially in Turkey, practices such as preventing waste of resources and recycling within the scope of sustainability have gained importance with the efforts of non-governmental organizations and businesses to provide competitive advantage. In this context, digitalization is seen as a key element in achieving sustainability goals at the socio-economic and environmental level. In solving global crises such as droughts, floods, forest fires and migration, the relationship between digital transformation and sustainability represents a holistic approach to meeting the basic needs of society.

Digitalization has accelerated the transformation of institutions such as education, economy and politics by affecting all segments of society from individuals to governments through the diffusion of information technologies. In this process, digital transformation is defined by the integration of advanced technologies and innovative business models, and has the potential to be a means and an end for sustainability goals. However, comprehensive regulatory frameworks and physical infrastructures need to be built to achieve these goals. It is emphasized that digitalization offers significant opportunities in sustainability issues such as access to clean water, poverty alleviation, gender equality and climate change, but must be carefully managed to prevent potential risks.

Digital transformation is defined as a phenomenon that encompasses technological, organizational and social change processes and has functions such as increasing social welfare, spreading digital culture and supporting productivity. However, it also has negative aspects such as loss of workforce, digital privacy violations, cyber-attacks and online addiction. Digitalization is intertwined with sustainability and stands out as an important tool in achieving resource efficiency, carbon footprint reduction, circular economy and social sustainability goals. However, attention is also drawn to the risk that technology may increase social inequalities.

Digital technologies offer innovative applications such as artificial intelligence, the Internet of Things (IoT), big data analytics and renewable energy systems that support environmental sustainability. AI enables optimization in energy and logistics management, while IoT devices can optimize the use of energy and raw materials. Furthermore, big data analytics can contribute to predicting environmental trends and reducing carbon emissions. While the potential of digitalization in achieving sustainability goals is great, the long-term impacts and risks of this relationship are still debated.

Digitalization includes critical elements for environmental sustainability such as energy consumption and electronic waste management. While the high energy consumption of data centers, servers and cloud computing systems leads to negative environmental impacts, the transition to renewable energy sources stands out as an important solution

to reduce these impacts. Moreover, due to the short lifespan of digital technologies, there is a need to sustainably manage the increasing amount of electronic waste, improve recycling processes and produce devices with longer lifespans.

Efforts to reduce carbon footprint are particularly noteworthy with technology companies' transition to renewable energy and carbon neutrality targets. Smart cities, smart transportation systems and infrastructures play an important role in sustainable urban development. Promoting green digitalization policies, developing standards that optimize the energy use of data centers and implementing inclusive strategies are seen as key steps in achieving environmentally sustainable development goals.

Sustainability requires an approach that aims for conservation of natural resources, social equality and ecological balance by addressing economic, social and environmental dimensions. Economic sustainability involves the conservation of natural capital and the efficient management of resources, while social sustainability involves equal distribution, gender equality and the effective provision of social services. Ecological sustainability, on the other hand, envisages the regulation of population and consumption levels so as not to exceed biological limits. In this context, a sustainability approach should prioritize ecosystem integrity over individual needs.

Digitalization creates environmental problems such as energy consumption, electronic waste, carbon footprint, use of natural resources and degradation of ecosystems. In particular, activities such as data centers and crypto mining increase energy consumption, while the short lifespan of electronic devices leads to an increasing amount of electronic waste. In addition, digitalization leads to excessive consumption of natural resources and damage to ecosystems. These problems make it imperative to manage digitalization with policies that are compatible with sustainability principles.

Keywords: Digitalization, Sustainability, Waste Culture, Green Consciousness, E-waste.

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RELATIONS WITH THE EDITORIAL BOARD

- Editors must ensure that all members of the editorial board advance the processes in accordance with editorial policies and guidelines.
- The editorial board should inform its members about the publishing policies and keep them informed of the developments.
- New editorial board members should be trained on editorial policies and should provide the information they need.
- It should ensure that the members of the editorial board evaluate the work impartially and independently.
- New editorial board members should be determined as contributing and suitable.
- The members of the editorial board should send studies suitable for their field of expertise for evaluation.
- Must interact regularly with the editorial board.
- Regular meetings should be held with the editorial board for the development of publication policies and the journal.

Editorial and blind peer review processes

Editors; is obliged to implement the “Blind Refereeing and Evaluation Process” policies included in the journal’s publication policies. In this context, the editors ensure that the fair, impartial and timely evaluation process of each work is completed.

1. The preliminary evaluation of the articles sent to the journal is made within 15 days. Authors know that if they do not complete the changes requested from them during the pre-control phase for the files they upload to the system within 15 days at the latest, their submitted works will be returned before the editing phase.
2. Articles that are reviewed and edited by the secretary in terms of technical conditions are sent to the editorial board. The author is informed about the article within 15 days.
3. After the editorial board examines the article in terms of its scientific quality within the framework of editorial responsibility, it decides to return, reject or start the article processing process.
4. After the language editor’s review, the double-blind peer-review process is initiated. The article is directed to at least two referees through field editors.
5. Considering the conflict of interest in the determination of the referees, care is taken not to appoint referees from the same institution with the author or who are found to have worked with the author in the past. Within this framework, the principle of diversity and impartiality is observed in the appointment of arbitrators.
6. For the scientific review of the articles, referees who are expected to evaluate with a competent approach and comply with the referee responsibilities and have academic studies on the literature are appointed.

7. The article is prepared for publication if both of the referee reports determined in line with the blind refereeing system are positive. If one of the referee reports is positive and the other is negative, the article is sent to a third referee. If the third referee's report is positive, the article can be published with the approval of the editorial board. If the third referee's report is negative, the article cannot be published.

8. When the referee reports are completed, the article is sent back to the author for correction. Authors must make edits and upload them to the system within 15 days. The articles that the referees want to see again are sent back to the referee after the author's editing. After the referee reports and with the approval of the editor, the article is sent for final reading. After the post-reading process, the article, whose layout processes are completed, goes to the publication stage.

9. The final decision regarding the publication of the articles belongs to the editor. The author is informed with a decision letter containing the referee reports and editorial evaluation.

10. Article processes are completed within 3 months and published in the January or July issue determined by the editorial board.

Quality assurance

Editors; are responsible for publishing every article published in the journal in accordance with journal publication policies and international standards.

Ethics committee, human and animal rights

Editors; are responsible for refusing the study lacking the Ethics committee approval for the subjects used in the studies or in the absence of permission for experimental research.

Precaution against possible abuse and misconduct

Editors; are obliged to take precautions against possible abuse and misconduct. It is among the responsibilities of the editor to share the relevant findings, as well as to carry out a rigorous and objective investigation regarding the identification and evaluation of complaints regarding this situation.

Ensuring academic publication integrity

Editors should ensure that judgments containing errors, inconsistencies or misdirection in studies are promptly corrected. Editors; is obliged to implement the "Blind Refereeing and Evaluation Process" policies included in the journal's publication policies. In this context, the editors ensure that the fair, impartial and timely evaluation process of each work is completed.

Protection of intellectual property rights

Editors; are obliged to protect the intellectual property rights of all published articles and to defend the rights of the journal and the author(s) in case of possible violations. In addition, the editors are obliged to take the necessary measures so that the contents of all published articles do not violate the intellectual property rights of other publications.

Constructiveness and openness to discussion

Editors;

- should take into account the persuasive criticisms of the works published in the journal and display a constructive attitude towards these criticisms.
- The author(s) of the criticized studies should be given the right to reply.
- should not ignore or exclude studies with negative results.

Complaints

Editors are obliged to carefully examine the complaints from the authors, referees or readers and respond in an enlightening and explanatory manner.

Political and Commercial Concerns

The journal owner, publisher and no other political or commercial factors affect the editors' independent decision making.

Conflicts of interest

Editors; take into account the conflicts of interest between the author(s), referees and other editors, and ensures that the publication process of the studies is completed in an independent and impartial manner.

ETHICAL RESPONSIBILITIES OF THE PUBLISHER

- The Board of Directors of the Journal acts with the awareness of its ethical responsibilities:
- Editors are responsible for all processes of the works submitted to the journal.
- It undertakes to create an independent editorial decision.
- It has the responsibility to take precautions against all kinds of scientific abuse, citation fraud and plagiarism regarding the editors.

Correction Policy

If changes are required after the article is published, editorial board of the journal will evaluate the request in accordance with the COPE guidelines. Minor changes in articles that are less than five days past the publication date are carried out immediately if considered appropriate. In cases where the publication date is old or requires major changes, a correction article is published. Correction notifications may come from the author, journal board members or third parties.

Correction Article: The original article and the correction article are linked on the article information page, referencing each other. The reader is presented with a notification that the article has been corrected and is directed by a link to the corrected version. The correction article is published in the first issue following the submission of the correction notice and receives a standalone DOI. For the corrected version published in the new issue, a special "Correction" section is created and [Number]. [Correction:] [Article Title].

Retraction Policy

Articles that are damaging to the results of the study, to its own existence, or that involve ethical, scientific, or legal misconduct will be processed in accordance with COPE retraction guidelines. For these studies: A retraction notice attached to the original article

and a retraction statement published in the new journal issue. A special “Retraction” section is created for the retraction article published in the new issue. [Sequence No]. [Retraction:] [Article Title], the retraction statement is published in this section.

Article Removal Status

It is rare however it may be necessary to remove an article for special reasons. In the following cases, the article will be removed immediately and a removal notice is going to be published in the following issues:

- Situations violating the rights of privacy and the right to be forgotten.
- Being defamatory and interfering with the exercise of legal rights.
- Binding notices such as court orders etc.

If the justification includes metadata, doi.org and Indexes are notified to make the necessary changes, and the article data are removed from the journal repositories, if available.

If You Face an Unethical Situation...

If you encounter any unethical behavior or content other than the ethical responsibilities mentioned above in our journal, please notify us via e-mail to eid@erciyes.edu.tr.

Türkçe için: <https://dergipark.org.tr/tr/pub/erciyesiletisim/policy>

Plagiarism Policy

All new submissions are automatically screened by Editorial Office using iThenticate. The editorial board of Journal of Erciyes Communication complies with the following rules for plagiarism policy:

- The articles with an overall similarity index of greater than 15% are rejected without proceeding for the formal peer review. In such cases, the author(s) will be asked to re-revise the article within three weeks.
- Similarity index for single source must be equal to or lower than 3%.
- “Exclude Bibliography: ON, Exclude Quotes: OFF, Exclude Matches: OFF” must be selected for iThenticate report.
- Editors may also choose to run a similarity report at any other point during the review process or pre-publication.

The above mentioned rules are accepted by all authors who have uploaded articles to the Journal.

Copyright Policy

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Authors may reuse their works for non-commercial purposes, store, distribute and reproduce them regardless of the medium.

From the moment the authors submit their work to the journal, it is assumed that they accept the above-mentioned license terms as well as the principles of open access and allow the public sharing of their works. You can find other details in the **Data Management Policy** section.

Erciyes İletişim Dergisi Yazım Kuralları

<https://dergipark.org.tr/tr/pub/erciyesiletisim/writing-rules>

Journal of Erciyes Communication Author Guidelines

<https://dergipark.org.tr/en/pub/erciyesiletisim/writing-rules>

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