


THE ROLE OF OUTDOOR ADVERTISING IN CONSUMER BEHAVIOUR IN IMPLEMENTING THE GOALS OF SUSTAINABLE DEVELOPMENT: A CASE STUDY OF LITHUANIA

Kristina SAMASONOK ¹, Aldona JARAŠUNIENĖ ², Margarita IŠORAITĖ ¹

¹ Faculty of Business Management, Vilniaus Kolegija/Higher Education Institution, Vilnius, Lithuania

² Faculty of Transport Engineering, Vilnius Gediminas Technical University, Vilnius, Lithuania 

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Abstract. The article discusses the possibilities of managing consumer behavior in the context of implementing the goals of sustainable development formation through outdoor advertising and the assessment of the impact of outdoor advertising on consumer behaviour formation. Research objective – to determine the impact of outdoor advertising in consumer behaviour in implementing the goals of sustainable development. The research methods employed include descriptive analysis, quantitative analysis, and statistical techniques. The research was conducted from September 10, 2024, to September 24, 2024, based on a Lithuanian case study (N = 396). When applying a quantitative research strategy the obtained highest average estimates show that illuminated signs, advertising on outdoor video screens and large format posters in advertisements spread the message and have a great impact on consumer behaviour when implementing the goals of sustainable development. It was also found out that according to the majority of participants, the images in advertising (pictures, paintings, etc.), advertising design and outdoor advertising originality, as well as advertising content and its informative nature are the factors shaping consumer behaviour when implementing the goals of sustainable development. The use of a convenience sample, coupled with an imbalance in terms of gender and age distribution, limited the generalizability of the conclusions. Therefore, the spheres of further researches could be expanded with more representative samples and including the elements of qualitative method into the survey (e.g., open questions, group discussion (in Focus group) etc.), regression modelling and factor analysis would provide more insights and supplement quantitative conclusions. The research results provided valuable insights about the role of different types of outdoor advertising and its impact on consumers of different ages when implementing the goals of sustainable development and on the basis of the Lithuanian case could be easily extrapolated to other contexts while expanding the spheres of further researches, both at the national level and with cross-border samples.

Keywords: managing consumer behaviour formation, outdoor advertising, sustainable development.

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✉Corresponding author. E-mail: m.isoraitė@vtf.viko.lt

1. Introduction

Rapidly changing market conditions are forcing companies to become more consumer-oriented, to get to know the consumer better, and to uncover the key characteristics that shape consumer behaviour.

Outdoor advertising is unique in its ability to engage target consumers through emotional appeal and behavioral influence. The planning of outdoor advertising depends on the set goals of the campaign, the target audience and the available budget. When developing outdoor advertising, it is essential to refine the central message to ensure clarity and comprehension.

When investing in and actively using outdoor advertising, it is recommended to conduct additional research – whether consumers saw the advertisement, how they understood the main message, and what they remembered. Such studies are specific to outdoor advertising.

Çiftçi and Karabulutlu (2020) note that a distinguishing feature of outdoor advertising, in contrast to other advertising forms, is that it is accessible without direct cost to the consumer. Outdoor advertising is only an advertising medium that can be achieved without any effort and in this respect, it differs from others.

Roux and van der Walldt (2014) notice that outdoor advertising is more effective in delivering content and advertising because it allows advertisers to tailor their messages based on location, context, the time of day and the day of the week.

When analysing the process of consumer behaviour formation, a particular emphasis is laid on its management. Not a single scientist admits that outdoor advertising might be one of the means of marketing communication in the world of commerce and business, the application of which not only creates a competitive advantage and informs potential consumers on the goods on sale and services provided (Gülmez et al., 2010), but also outdoor advertising could be one of the ways to impact the consumer buying decisions (Korenkova et al., 2020; Madlenak et al., 2023; Alavijeh et al., 2019) as well as to shape consumer interests, habits and opinion or even change his behaviour (Awan et al., 2016; Sarkar, 2021; Madlenak et al., 2023).

Outdoor advertising is very important for its form and placement in specific positions and locations as well as for advertising elements, therefore advertising creating issues regarding its impact on consumer behaviour received the attention of many researchers. Significant scientific works make assumptions that drawings, pictures, the font, the uniqueness of visual material (Zeqiri et al., 2019), advertising design (Falebita et al., 2020), advertising headline and information content (Vrtana & Krizanova, 2023; Falebita et al., 2020), the implementation and application of modern 3D technologies (Kovačič, 2012) and creative design using advanced technologies (Li & Hasan, 2022) are the elements impacting consumer behaviour formation. However, the scope of scientific ideas that reveal consumer behaviour formation through outdoor advertising is small enough, since emphasis is laid only on psychologically positive impact of outdoor advertising elements on consumers. Therefore, in order to create a good marketing strategy the most important aspect should be a more detailed research special attention to the prediction of consumer behavior formation opportunities in the context of sustainable development using outdoor advertising revealing the respondents' attitude towards outdoor advertising and its impact on consumer behaviour formation and determining the possibilities of managing consumer behaviour formation implementing the goals of sustainable development through outdoor advertising. The originality of the research is related to the fact that the role of different outdoor advertising was determined and different impact on consumers of different ages in implementing the goals of sustainable development was found out. Moreover, on the basis of aspects distinguished in the course of the research performance it could be easily extrapolated to other contexts when foreseeing the opportunities for implementing the goals of sustainable development in consumer behaviour by applying outdoor advertising on the basis if the Lithuanian case.

Scientific relevance enabled to formulate the following problematic questions:

- What kind of advertising has the greatest impact on consumer behaviour when implementing the goals of sustainable development?

- How does the assessment of the role of outdoor advertising differ in consumer behaviour in implementing the goals of sustainable development in groups of participants of different ages?
- What are the techniques of managing consumer behaviour formation for consumers of different ages implementing the goals of sustainable development?

On the basis of insights of scientific literature on the relevance of implementing the goals of sustainable development. The primary research objective is to identify the role of outdoor advertising in influencing consumer behavior with respect to the implementation of sustainable development goals.

The research objectives are as follows:

- After performing the analysis of methodological literature on the topic discussed to determine the possibilities of managing consumer behaviour formation in the context of implementing the goals of sustainable development through outdoor advertising.
- To investigate and compare the impact of different types of outdoor advertising on consumers of different ages when implementing the goals of sustainable development.
- To determine the possibilities of outdoor advertising effectiveness in forming consumer behaviour in the context of implementing the goals of sustainable development.

Scientific novelty is determined by the fact that in searching innovative forms, methods and techniques in consumer behaviour formation by means of outdoor advertising the empirical research identified the impact of outdoor advertising on consumer behaviour formation in the context of implementing the goals of sustainable development. Another novelty is that possibilities of managing consumer behaviour implementing the goals of sustainable development formation through outdoor advertising were tested when empirically applying the methods of mathematical statistics; the research has proved that the impact of outdoor advertising on consumer behaviour formation of consumers of different age groups differs qualitatively, i.e., based on the research results, it is assumed that outdoor advertising can be one of the ways involving people in the processes of sustainable development and encouraging the following of the principles of sustainable development. Accordingly, this research provides the knowledge necessary for determining the possibilities of managing consumer behaviour formation implementing the goals of sustainable development through outdoor advertising considering the characteristics of consumer's age and their individual needs. The research results and certain regularities enable us to make science-based decisions on managing consumer behaviour in the context of implementing the goals of sustainable development formation through outdoor advertising and on the basis of this research further research of this type could be conducted. It should be noted that the research is small in scope and in terms of age the sample of imbalance made it difficult to generalize its results and conclusions. Therefore, when foreseeing the spheres of further researches it should be advisable to expand the sample of subjects which would allow to carry out a comparative data analysis according to different socio demographic indicators and to obtain more representative data. In future it would be reasonable to supply the results of the research with other methods of information collection, e.g., incorporating the elements of a qualitative method into the survey (e.g., open questions, group discussion (Focus group), etc.), regression modelling and factor analysis would provide with more insights and supplement quantitative conclusions.

2. Literature review

Outdoor advertising. Outdoor advertising plays a crucial role in attracting a wide audience, shaping consumer needs, and ensuring sustained customer loyalty. Outdoor advertising has the purpose to announce something: about goods, events, and services. Outdoor advertising leads to actions when choosing specific products or services. Different types of advertising aim to influence the user's emotions and attitudes in different ways. Outdoor advertising is encountered by individuals regardless of their preferences, ensuring widespread exposure. Outdoor advertising stands are usually installed in the best strategic places, so the advertisement is inevitably seen by a large number of people, both pedestrians and drivers in the city, in the countryside, and especially on the main highways. Usually, outdoor advertising is seen repeatedly by the same people to a greater extent, so the advertising message is better remembered.

Hendon and Muhs (1986) and Çiftçi and Karabulutlu (2020) stated that when outdoor advertising is presented as examples of outdoor advertising on the city walls. Advertisements were posted on the city walls.

Lopez-Pumarejo and Bassell (2009) notice that today outdoor advertising is defeating those iconic giants in the cities where we live and work, as advertisers find it increasingly difficult to reach people through other media.

Li (2019) mentioned that outdoor media, like other types of media, attaches great importance to innovation and achievements, with a particular focus on media technology and innovation.

Wilson and Till (2011) noticed that it is reasonable to investigate the effect of the environment in which outdoor advertising is displayed on attitudes, beliefs, and purchase intentions of the advertised brand. The results of four experiments presented here show that the background environment does not affect the effectiveness of advertising, and the concerns of specialists about this may be unfounded.

Sridevi (2016) attempts to measure the effectiveness of outdoor media in Coimbatore. Studio proved that outdoor media is powerful in attracting a target audience with its media, location, advertising elements and the influence on respondents' purchasing behavior. The findings reveal the persuasive power of outdoor media on all respondents regardless of demographic factors, e.g., their age, gender, and the place of residence. Sridevi (2016) noticed that outdoor media is powerful enough to convince both advertisers and their target audience. Lesser et al. (2013) determine in their research that outdoor advertising is associated with a modest but clinically significant increased likelihood of obesity.

Swallehe and Mwilongo (2022) mentioned that the purpose of this study was to comprehensively evaluate the previous research on outdoor billboard marketing in developing nations. The survey begins with an introduction and history of outdoor billboard advertising to provide an understanding the element of the meaning and history. The concept of outdoor advertising marketing was also discussed.

The effect of outdoor advertising on consumer behaviour. Outdoor advertising is one of the oldest ways to inform potential users about sales and service companies, goods for sale and services provided. This advertising tool differs from others, because residents receive

information right on the street, walking or driving. Effective outdoor advertising requires strategic placement to ensure visibility and integration within the environment. The walls of the building are often decorated with various advertising posters, panels, signboards, and stands.

Gülmez et al. (2010) conducted a face-to-face survey with 400 non-randomly selected individuals residing in Sivas. The result of the analysis shows that people generally have a positive view of outdoor advertising. They find outdoor advertising more eye-catching and creative than other types of advertising and their physical size gives them an effective visual impact. Respondents also said that outdoor advertising contributed to the cityscape's diversity and beauty, and they did not pollute the environment.

Awan et al. (2016) mentioned that advertising can change the behavior of users. Factors include advertising necessity, advertising enjoyment, advertising dominance, brand recall advertising, and promotion. This is very useful for the development and modification of consumer buying behavior, which is a very positive sign for advertising and marketing companies. The research model has also been confirmed, revealing that advertising has a strong influence on consumers purchasing behavior and expanding your choices.

Brand image, persuasiveness, and celebrity endorsements are the main factors that raise consumer product intentions and purchasing behavior. The purchase behavior is greatly influenced by the image of the product which is created by advertisers.

Gülmez et al. (2010) mentioned that advertising is one of the most effective applying marketing communications to businesses that wants to achieve its objectives, to survive in this competitive environment and to create competitive advantage.

Alavijeh et al. (2019) notice that advertising effectiveness depends on these factors: 1. Wide access and high frequency mean numbers audience exposure time and total market shares or population; 2. Impression refers to the length of time an ad is viewed; 3. Geographic flexibility means completion and support of other means of advertising in selected geographic areas in need in national, regional and even local markets; 4. Great creativity means the ability to attract an audience focusing on large fonts, colors and other elements; 5. Little concern for the environment and criticism means that the approach of outdoor advertising must not be distracting and ugly, which of course depends on one's taste; 6. Short and limited messages mean that the speed of outdoor advertising and messaging should be kept short, since long writings and attractions are unlikely to be effective; 7. Low cost of outdoor advertising (cost per thousand people); 8. Being on time means being vulnerable on time advertising message; 9. The deal crowd mode like crowds, heat, and rush may ignore installed ads.

Kovačič (2012) observes that the presented studies reflect the inability to escape the effects of external advertising. Despite the author's efforts to avoid them, ads are processed in the user's brain and affect it. Dangers from consumers are quantitative and qualitative in nature. As the volume of outdoor advertising increases, consumers are increasingly influenced by using this media to process a large volume of advertising messages.

Roux (2017) mentioned that the findings of this study confirm that placement of outdoor advertising in specific positions and locations determine the effectiveness of a campaign to effectively reach a mass or target audience.

Woodside (1990) noticed that the data of the survey research, presented in the form of verbal reports, shows significant increases in the shopper/visitor traffic and purchase rates

associated with the use of outdoor signage. There is a lot of evidence to show that in-store (point-of-purchase) advertising increases purchase rates. A large number of field studies using real experimental and quasi-experimental designs are needed to provide a similarly strong evidence that outdoor advertising works.

Managing consumer behavior through outdoor advertising. Sarkar (2021) mentioned that advertising is the marketing of goods or services for financial gain of a well-known sponsor through the media. One of the components of the advertising gets a lot of attention.

Lichtenthal et al. (2006) argue that the use case for outdoor advertising is made deductively based on its unique features of business markets such as geographic concentration of buyers, the need to target members of the buying center, the advantages of integration communication, and the ability to create derived demand and focus on exhibitions.

Madlenak et al. (2023) mentioned that outdoor advertising can have a significant impact on consumer behavior management. It can be a reminder of the brand's presence, create brand awareness and influence brand recognition and loyalty.

Korenkova et al. (2020) argue that when it comes to outdoor advertising management, consumers can be exposed to outdoor advertising in different ways, and their purchasing behavior or decision-making may be inadvertently influenced by such an impact. According to Vrtana and Krizanova (2023), emotional actions have a significant impact on consumer shopping behavior and decision-making management.

Šostar and Ristanović (2023) research has shown that consumer behavior is influenced by the factors at different exposure levels: personal factors, as well as a person's income and financial capabilities have the greatest influence; a person's financial capabilities and income are affected by what they can afford, which directly affects their purchases. Šostar and Ristanović (2023) results show that personal factors have a great influence on purchasing decisions. For example, if someone cares about ecology, he will definitely buy organic products.

Bachnik and Nowacki (2018) mentioned that the research should include the recipients of the advertisement to provide the knowledge about the perception of the appearance of controversial motives in advertising, their kind, their influence on the noticeability and memorability of the message, purchase motives and behavior in the marketplace, as well as diagnoses of the knowledge about opportunities respond to unethical advertising activities and actual behavior in this regard.

Zeqiri et al. (2019) analyzed that the image, texture, and placement are the fundamentals of any billboard advertising and strongly attract the attention of customers.

Akhtar (2019) argues that people cannot pay attention to all the billboards they are exposed to in a limited amount of time passing by on the road. The above-mentioned authors concluded that marketers must be innovative by creating their own billboards because they are competing not only with sellers of the same product but with hundreds of other products as well. They can do this by focusing on size, color, images, location, and the models used.

Dhaliwal (2016) stated that numerous studies have investigated advertising effectiveness over the last decade. General means of advertising effectiveness include ad recall, ad recognition, brand awareness, clicks or click-through rate, approach to advertising and branding, and purchase consideration. The effectiveness of these measures was judged on their ability to predict purchase decisions.

Narayana Reddy et al. (2023) mentioned that the result of the analysis shows that people generally have a positive opinion of outdoor advertisements. They find outdoor advertising to be more attractive and creative compared to other types of advertising, and their physical size provides an effective visual impact.

Li and Hasan (2022) stated that in order to deepen the interaction with users, interactive outdoor advertising must strengthen creative design, use advanced high-tech technology, and create a stage-style media environment to promote audience participation which helps to improve the effect of advertising interactive communication.

Swaminathan et al. (2013) argue that the study also revealed the fact that today's consumers still prefer stationary items billboards, hand-drawn posters etc., and will be useful for advertisers and marketers to capitalize on this interest by showcasing products. At the same time, advertisers have to keep in mind consumer attitudes towards certain locations such as malls, hospitals, shopping malls, etc., and should create their advertising plan accordingly.

Falebita et al. (2020) analyzed that attractiveness, variety, the level of interaction, the quality and design, the content and amount of information, persuasiveness, brand image, celebrity endorsement, the timing and sequence of advertisement are significant advertising attributes that could contribute to the effectiveness and level of influence of advertisement in altering consumer behavior. Such advertisement has a psychological impact on customers and influences them cognitively, emotionally, and behaviorally.

In recent years, outdoor advertising has undergone significant technological developments that have enhanced its effectiveness and consumer engagement. Digital billboards, interactive screens, and even Augmented Reality (AR) have reshaped how advertisers connect with audiences. Digitization allows advertisers to change content dynamically, based on time, weather, or even the audience's behavior, creating more personalized and relevant messages. Interactive elements, such as touch screens or mobile integration, have made outdoor advertising more engaging, enabling consumers to interact with the ad, increasing recall and action. The application of 3D technology and augmented reality offers an immersive experience that creates memorable, impactful moments for consumers, thus strengthening the effectiveness of the ad. These technological advancements play a critical role in increasing consumer interaction with outdoor advertising, contributing to its effectiveness in reaching and influencing consumer behavior.

Wilson (2023) stated that a new form of outdoor advertising, digital billboards have become popular in recent years due to their revolutionary way to control when and where specific ads will appear. However, this development also requires a more sophisticated optimization for strategic deployments: advertisers must not only decide on a set of places to show their ads, but also when to show them.

Many studies have shown that outdoor advertising has evolved significantly with the introduction of interactive technologies, such as digital screens and Augmented Reality (AR). These formats provide advertisers with the opportunity to engage consumers beyond traditional visuals, fostering a more immersive and participatory experience. However, despite these advancements, studies comparing the effectiveness of digital billboards, transit advertising, stationary billboards, and 3D technology in shaping consumer behavior are still limited. Comparative research in this area could help clarify which outdoor advertising formats are

most effective in influencing consumer actions, particularly in the context of sustainability. Research by Zeqiri et al. (2019) on billboards versus interactive digital screens in urban environments found that the latter significantly increased consumer engagement and message retention, especially when integrated with real-time data feeds (e.g., weather, local events).

The literature review shows that it is important to pay attention to measures of advertising effectiveness such as recall, recognition, brand awareness, attitudes towards advertising and branding. There are still problematic areas where there is a lack of interaction with and control over consumers, where interactive outdoor advertising does not sufficiently reinforce creative design, use advanced high-tech technologies and create a stage-style media environment that encourages audience participation.

The analysis shows that the impact of advertising on the management of consumer behaviour is still highly subjective and not generalisable. Outdoor advertising has been found to be a very important and potentially valuable tool for companies, advertisers, consumers, policy makers and researchers in advertising and consumer behaviour research.

In summarising the literature, it is important to carry out a quantitative study to determine the impact of outdoor advertising on consumer behaviour in more detail as well as to understand the possibilities of the impact of outdoor advertising on the management of consumer behaviour formation.

3. Outdoor advertising in forming consumer behavior in the context of implementation of Sustainable Development Goals

Išoraitė et al. (2023) noticed that sustainable development must be realized as a necessity that determines the choices of each person and can contribute to improving the quality of life, strengthening health, protecting the environment, reducing poverty, economic development, ensuring justice guarantees and solving other problems. From the point of view of most scientists, outdoor advertising can be one of the essential parts of the decision to implement the goals of sustainable development.

Previous studies have explored various outdoor advertising formats and their effectiveness in shaping consumer behavior. Billboards, digital screens, and transit advertising are among the most common forms, each with distinct advantages and limitations. A study by Gülmez et al. (2010) suggests that static billboards are effective in reaching broad audiences, while digital billboards can target specific consumer segments with dynamic, changing content. In contrast, transit advertising, such as bus and subway ads, tends to offer a more captive audience, which may enhance brand recall for commuters, as observed by Wilson and Till (2011).

Comparing these formats reveals that while static billboards are highly visible and effective in creating brand awareness, digital and interactive outdoor formats often provide better engagement opportunities by allowing for personalized and real-time content delivery. The use of mobile integration, such as encouraging consumers to interact with ads through smartphones, further boosts the effectiveness of digital and interactive ads over traditional formats.

The findings from this comparison help to contextualize and validate the research on outdoor advertising's role in shaping consumer behavior, especially when integrating technology into the advertising strategy.

Research on the impact of outdoor advertising on sustainable consumer behavior is still emerging, but early studies suggest a strong link between the two. Sustainable marketing efforts, when conveyed through outdoor advertising, have the potential to influence consumer choices towards more environmentally friendly products and behaviors. While much of the research on advertising effectiveness focuses on recall and recognition, studies have also begun to explore its role in fostering long-term sustainable behaviors.

For example, some studies suggest that outdoor advertising promoting eco-friendly products and services can shift consumer perceptions and encourage more sustainable consumption patterns. A study by Lopes et al. (2024) found that outdoor advertisements that highlight sustainability features, such as eco-friendly packaging or carbon-neutral certifications, are more likely to influence consumers' purchasing decisions. However, it is important to note that consumer behavior is complex, and alternative explanations, such as social influence or peer behavior, may also play a significant role in motivating sustainable actions.

Further research should explore how outdoor advertising can be strategically used to promote behaviors that align with sustainable development goals. By targeting consumers at moments when they are making environmentally conscious decisions, outdoor advertising can reinforce pro-environmental actions and contribute to a broader societal shift towards sustainability.

Cheng et al. (2023) mentioned that investigated the impact of sustainable development goals on promoting consumers' ethical consumption intentions by examining the underlying factors and decision-making process related to ethical consumption from a firm's perspective. Cheng et al. (2023) study first proposes an integrative model of ethical consumption based on a reformulated Theory of Reasoned Action (TRA) model for ethical behavior that undertakes to account for both rational purchasing and SDG promotions.

Lopes et al. (2024) considered that sustainable advertising refers to promoting products or services covering the principles of environmental, social, and economic sustainability. This includes communicating the benefits of sustainable practices such as environmental mitigation impact, promoting social responsibility, and ensuring economic viability.

Qalati et al. (2024) stated the changing dynamics of consumer behavior in today's digital marketplace present opportunities and challenges for sustainable marketing development, but consumer choices have a profound impact on the health of the planet as society grapples with pressing environmental issues such as deforestation, climate change and plastic pollution. Qalati et al. (2024) argue that before deciding on what to buy, consumers go through a series of emotional, social and psychological processes.

Pinho and Gomes (2023) analyzed that sustainable behavior (SB) is a set of conscious actions aimed at meeting current needs, taking into account its costs and benefits in terms of environmental impact, and is a set of intentional actions that result in the conservation of natural and social resources and includes pro-ecological and altruistic behavior. According to Pinho and Gomes (2023) SB can preserve the quality of life by protecting the integrity of the natural environment and the contribution of society.

Machová et al. (2022) considered that the role of marketing is to make consumers aware that sustainable development is not only about selective waste collection but there may be certain factors that make companies go green. As stated by Machová et al. (2022) all this

can be explained by increasing customer demand for environmentally friendly products and government legislation on environmental protection, as well as pressure from environmentally friendly competitors forcing companies to change their approach.

Koval et al. (2023) argue that the implementation of a circular economy contributes to the development of sustainable consumption and forms new consumer habits, changes the goods market and promotes innovation and ecological principles in the daily lives of residents, in addition, the increasing consumption of ecological goods is closely related to the individual's environmental responsibility, which is formed over time and affects the results of social production and the technological level of production. Koval et al. (2023) examine the problem of adjusting public demand, which would increase the pace of implementation of a circular economy, analyzes the factors influencing public demand and determines the cost of changing public goals for different groups of the population.

Cuc and Secan (2024) companies seek to promote their image as a sustainable business, and demonstrate their commitment to environmental protection and social responsibility, and these initiatives not only help to reduce the ecological impact of their activities but also increase public awareness of the company, strengthen its reputation and attract customers who value sustainability. Cuc and Secan (2024) argue that funding for these projects usually comes from corporate marketing and social responsibility budgets, representing a strategic investment in the company's image and sustainable future.

López-Sanz et al. (2021) study shows how the image of the destination, both initial and final, influences the behavior of rural tourists, as well as tourists' satisfaction and loyalty to the area. López-Sanz et al. (2021) considered that loyalty, which translates into repeat visits and recommendations to third parties, promotes the sustainable development of rural areas. The results showed the importance of destination image in forming a new image, and also showed that tourist satisfaction is the variable that most influences loyalty to a tourist area. This study is a new contribution to the study of sustainable development in rural areas, as it focuses on tourist loyalty and the benefits derived from it.

Houf et al. (2024) considered that green marketing can be described as advertising products with a focus on their environmental sustainability. According to Houf et al. (2024) consumer decisions online are influenced by many factors, such as economic, social and individual influences, as well as the online environment itself.

Ray and Nayak (2023) mentioned that marketing can change the game and give business sustainability not only in advertising but also in other domains from idea to sale. According to Ray and Nayak (2023) marketing also plays a critical role in achieving sustainability goals by promoting responsible consumerism and business practices.

Koval et al. (2024) mentioned that customer satisfaction is the main driver of behavioral intentions, and trust is the main factor in both generations' satisfaction with green plastic products, in addition, millennial satisfaction is determined by perceived value, while new generation satisfaction is determined by perceived quality. Koval et al. (2024) found that the results specifically apply to green plastic products, but not to other types of green products. According to the aforementioned author, the government can create better policies to support green products by offering tax incentives for recyclable products.

Koval et al. (2025) stated that the study reveals an urgent need to further investigate sustainable societal behavior in order to promote the development of a circular economy. Koval et al. (2025) look for possible ways to demonstrate the dependence of society on its well-being in a positive state of ecosystems, encouraging society to change its life principles from consumerist to rational, thoughtful and non-excessive.

Azizah et al. (2024) mentioned that environmental aspects will strengthen the eco-innovation model. Azizah et al. (2024) emphasize the importance of environmental aspects in promoting the eco-innovation model, which requires an intensive strategy in the design, development and development of new products or innovative processes and provides organizations with direction to develop responsible environmental strategies and policies.

Dimitrova et al. (2022) aim to examine the following internal and external factors influencing sustainable consumption behavior: Environmental Knowledge (EK), Materialism (MA), Environmental Impact (EIA), Sustainable Consumption Promotion (SCP) and Sustainable Consumption Behavior Intention (SBI). Dimitrova et al. (2022) noted that there is little research on the influence of negative values, such as materialism, on SBI.

Sileniece (2024) contributes to decision-making by providing a framework that helps distinguish GBN from traditional business negotiations and provides practitioners with a tool to effectively use negotiations to achieve a green business transition. According to Sileniece (2024) by integrating environmental considerations into every stage of the negotiation process, the results provide practical insights that improve negotiation outcomes.

Prokopenko et al. (2024) stated that green entrepreneurship is a key solution to the most complex environmental problems, while simultaneously stimulating the economy and creating inclusive social status for communities. Prokopenko et al. (2024) note that a review of successful examples highlights how innovative business models, strategic partnerships, technology application and community engagement are key to overcoming obstacles to achieving sustainability.

Analytical descriptive. Analysis of scientific literature related to the subject analysed and the research on the impact of outdoor advertising on consumer behaviour formation as well as discussions of the possibilities of managing consumer behaviour formation in the context of implementing the goals of sustainable development through outdoor advertising and presentation of generalized results.

Quantitative method. Assessing that outdoor advertising can be one of the instruments that can influence change in consumers' thinking, attitude and attitudes, decision-making, awareness and responsibility formation contributing to the implementation of the goals of sustainable development, with that objective for analysing the impact of outdoor advertising on consumer behaviour and forecasting the possibilities of managing consumer behaviour formation through outdoor advertising, the quantitative method (a questionnaire survey) was used. Research instrument a questionnaire consisting of open questions when distinguishing thematic groups of questions: the attitude of the research participants towards the impact of outdoor advertising on consumer behaviour in the context of implementation of sustainable development goals; the possibilities of managing consumer behaviour formation through outdoor advertising implementing the goals of sustainable development. Drawing on theoretical insights and criteria from scientific literature, the questionnaire was designed to assess

participants' attitudes toward managing consumer behavior through outdoor advertising in the context of sustainable development. According to most scientists, outdoor advertising could be one of the ways of forming consumer's interests and habits and even changing his behaviour (Awan et al., 2016; Sarkar, 2021; Madlenak et al., 2023) and could be considered as one of the most effective ways when seeking to influence changes in consumer's opinion (Sridevi, 2016; Lesser et al., 2013; Çiftçi & Karabulutlu, 2020; Lopez-Pumarejo & Bassell, 2009). On the basis of this fact the questionnaire was made up of the statements which allowed to assess the research participants' attitude towards the impact of outdoor advertising on consumer behaviour in the context of implementing the goals of sustainable development. As stated by Roux (2017), consumers are attracted by billboards due to their location and advertising elements advertising shields, posters on buildings and public transport vehicles are one of the key factors that can give a desired effect and attract the attention of mass and target audience whereas as stated by other scientists, stationary billboards (Swaminathan et al., 2013) and digital billboards (Wilson, 2023) could be one of the forms of outdoor advertising forming the customer behaviour. Therefore, outdoor advertising with elements and forms that are attractive and acceptable to the user can be one of the ways of forming consumer behavior and habits associated with ensuring the processes of implementing the goals of sustainable development. Based on this perspective, the questionnaire categorizes different forms of outdoor advertising to assess participants' perceptions of their effectiveness in shaping consumer behavior within the framework of sustainable development goals. In distinguishing the category of managing consumer behaviour implementing the goals of sustainable development formation through outdoor advertising the works of researchers who stressed that drawings, pictures, the font, the uniqueness of visual material (Zeqiri et al., 2019), advertising design (Falebita et al., 2020) the use of advanced technologies (Li & Hasan, 2022) as well as the advertisement headline and information content (Vrtana & Krizanova, 2023; Falebita et al., 2020), the implementation and application of modern 3D technologies (Kovačič, 2012) are considered as the most effective ways impacting the consumer behaviour formation. Therefore, the questionnaire distinguished the following outdoor advertising elements: images and other visual aids, headlines, information contents etc., as the main aspects impacting managing consumer behaviour this is associated with habits of sustainable behavior formation through outdoor advertising. The validity of the questionnaire was determined using Cronbach's alpha values in each group of values of the questionnaire separately. The results of statistical data analysis show that the overall degree of internal consistency of the questionnaire statements (the number of variables = 26) is sufficiently high (Cronbach's $\alpha = 0.84$) and varies from 0.78 to 0.89. The internal consistency of variables was checked in each group of the questionnaire separately. The questionnaire distinguished the constructs that included: 1) the research participants' attitude towards the impact of outdoor advertising on consumer behaviour formation implementing the goals of sustainable development; 2) the assessment of managing consumer behaviour formation in the context of implementing the goals of sustainable development through outdoor advertising. After checking the impact of outdoor advertising on consumer behaviour formation in the context of implementing the goals of sustainable development of the group of the questionnaire statements consisting of 11 statements, it was found out that Cronbach's $\alpha = 0.9103$ and it varies from 0.9062 to

0.9108. After checking the group of questions, consisting of 15 statements, on the impact of managing consumer behaviour implementing the goals of sustainable development through outdoor advertising it was found out that Cronbach's $\alpha = 0.869$ and it varies from 0.851 to 0.875. Bearing in mind the fact that the internal consistency should vary from 0 to 1 and the coefficient value of Cronbach's alpha is 0.60 it should be stated as it is appropriate for the research (Pakalniškienė, 2012), whereas the obtained data of Cronbach's alpha shows that groups of included question statements were properly selected.

Statistical. For processing the data obtained in the research process statistical analysis methods were used. In determining the differences obtained in several independent populations Student's *t* test was used (to compare the averages of two independent samples). When the level of significance was less than 0.05, the difference in characteristics was considered as statistically significant. Percentage distribution (frequency) was calculated. Statistical data analysis was performed using SPSS (Statistic Package for Social Sciences), software package of 17 version data and MS Excel software of 2016.

4. Research process and respondents

4.1. Survey sample

396 Lithuanian residents participated in the research, the majority of whom were women ($N = 303$ (76.5%)) and only 86 men (21.7%); 3 (0.8%) of the survey participants marked "other", while 4 (1%) did not specify their gender. When analysing the age of the research participants it was found out that more than two-thirds ($N = 264$ (66.7%)) of participants were between 46 and 65 years old, while in the age of group under 45 years old only one third of participants ($N = 124$ (31.3%)) Lithuanian residents up to 66 years of age and older ($N = 5$ (1.3%)) made up only a small part, whereas 3 participants (0.7%) did not specify their age. On the basis of demographical characteristics of the research participants it was found out that the research included individuals of various demographic groups, which allowed to get a sufficiently objective opinion of the participants about the impact of outdoor advertising on customer behaviour and determine the possibilities of managing consumer behaviour formation through outdoor advertising, as one of the possible ways of shaping consumer behavior and changing their attitudes, thinking and habits, encouraging following the principles of sustainable development. However, despite the fact that the difference in the respondents' age groups was big enough, which could be considered as the research limitation, a comparative data analysis was carried out in different age groups. On the other hand, this research conducted in the group of Lithuanian residents is small in scope, therefore its results may not reflect the entire population, however, in case that the results are not transformed outside the age group of the research participants they can be considered as reliable and allow us to draw statistically significant conclusions taking into account the research phenomenon and the study group. After assessing the obtained results, in the perspective of further research, in order to achieve a greater representativeness and judge the general whole according to the obtained results it would be appropriate to expand the sample of subjects and conduct the research when involving not only Lithuanian residents.

4.2. Research procedure

The research respondents were selected using a convenience sample. The method of distribution using an electronic system on-line survey was used. This resulted into a relatively low return rate of completed questionnaires and the lack of distribution of a balanced sample with regard to the aspects of gender and age. The research duration two weeks. The principle of quality control was used in the on-line survey, that is, the internal verification of the research performance was performed (the completeness of filling out the questionnaire, the consistency and duration of the survey execution). Carelessly or not completely filled out forms (e.g., in all graphs of the questionnaire the same numbers were marked etc.) were not included into the further data analysis. For further data analysis 396 questionnaires were used which were considered as appropriate for statistical analysis. The initial version of the questionnaire was tested on a randomly selected group of participants ($N = 25$). During the completion of the questionnaire, the respondents were asked to make critical comments if any statement was not clear or accurate. Later the statements of the questionnaire were refined based on the expressed comments. This resulted in the final version of the questionnaire. The questionnaires completed during the pilot study were not included in the further analysis of the results. The research was carried out on the basis of the ethic principles of social research. At the beginning of the questionnaire the following information was provided: the information on who performs the research, the objective of the research, its anonymity, as well as that the results obtained will be processed and presented for generalization. It was not difficult to preserve the principles of data protection and confidentiality, since it was impossible to see a direct connection between a respondent and his questionnaire because no name or surname or other identification information was available. In the course of the research performance the principle of voluntariness and free decision-making to participate in the survey was observed. Respondents could freely decide whether to participate in the survey or not, therefore, filling in the questionnaire was considered as a consent to participate in it.

5. Research results

After assessing that outdoor advertising can be not only one of the ways to increase sales, inform consumers about new goods or services, but also a tool for promoting the implementation of sustainable development goals, it is important to clarify the attitude of research participants in assessing outdoor advertising effectiveness of formation of consumer behavior in the context of implementation of the goals of sustainable development.

After analysing the impact of outdoor advertising on consumer behaviour and in order to predict the possibilities of application of outdoor advertising in forming consumers' sustainable behavioral habits, the highest averages of estimates show that according to the respondents' assessment, illuminated signs ($M = 6.92$), advertising on outdoor video screens ($M = 6.38$) and wide format posters ($M = 6.06$) are the most effective forms of outdoor advertising impacting consumer behaviour in the context of implementing the goals of sustainable development formation to a great degree (Figure 1). However, in the opinion of the research

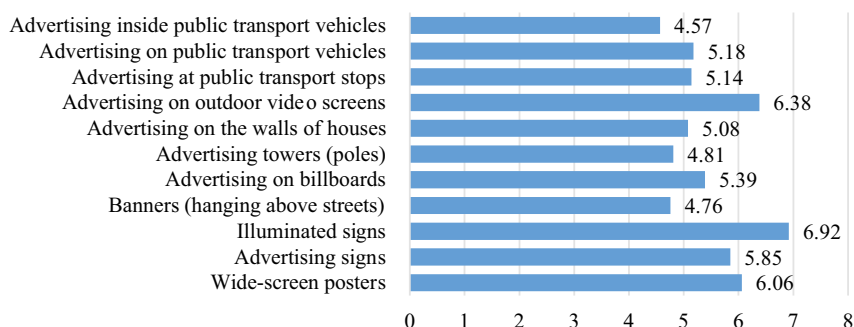


Figure 1. The assessment of the impact of outdoor advertising on consumer behaviour formation in the context of implementing the goals of sustainable development ($N = 396$, M are average values, $Max = 10$) (source: research results)

respondents, banners hanging above streets ($M = 4.76$) and advertising towers ($M = 4.81$) have a smaller influence to customer behaviour forming habits of sustainable behavior. On the other hand, the research results show that advertising in public transport stops ($M = 5.14$), on vehicles ($M = 5.18$) or advertisements inside vehicles ($M = 4.57$) have a smaller impact on consumer behaviour formation in the context of implementing the goals of sustainable development. In creating a good marketing strategy, it is necessary to be interested in the latest trends in advertising creation. Therefore, creating social and environmental well-being and ensuring sustainable development processes, it is important to look for proper communication solutions so that consumers could be attracted to outdoor advertising whereas the advertised product or service would gain a competitive advantage. Otherwise, the results of the research assume that the selection of appropriate outdoor advertising which most consumer attention, such as illuminated signs, outdoor video screen advertising, and wide format screens, may be one of the ways to encourage the consumers to consciously direct their actions towards sustainable development implementation of goals to reduce environmental problems and ensure economic and social welfare.

Comparative data analysis with regard to different age groups showed that research respondents under 45 years of age assessed the impact of advertising as statistically significant ($p < 0.05$) when distinguishing the following types of advertising, as one of the most effective ways to form consumer sustainable behavioral habits: advertising signs ($M = 6.27$), banners (hanging above streets) ($M = 5.66$), advertising on billboards ($M = 5.95$), advertising towers ($M = 5.25$), advertising at public transport stops ($M = 5.68$), on public transport vehicles ($M = 5.66$) and inside public transport vehicles ($M = 5.07$) compared to those respondents who were 46 years of age and older (Table 1). Accordingly, statistical data analysis showed that respondents under the age of 45 assessed the impact of outdoor advertising in the context of implementing the goals of sustainable development, namely, illuminated signs ($M = 7.21$), advertising on the walls of houses ($M = 5.32$) and advertising on outdoor video screens ($M = 6.69$) by higher estimate averages compared to older research participants (from 46 years of age and older) (respectively: ($M = 6.79$), ($M = 4.97$) and ($M = 6.25$)), however, the assessment

Table 1. The assessment of the impact of outdoor advertising on consumer behaviour in the context of implementing the goals of sustainable development formation in groups of respondents of different ages (*M* are average values, Max = 10) (source: research results)

	Respondent under 45 years of age		46 years of age and older		t	p
	M	SD	M	SD		
Wide-screen posters	6.04	2.95	6.07	2.92	0.78	0.938
Advertising signs	6.27	2.74	5.65	2.72	2.039	0.042
Illuminated signs	7.21	2.7	6.79	2.82	1.366	0.173
Banners (hanging above streets)	5.66	2.82	4.31	2.68	4.422	0.001
Advertising on billboards	5.95	2.48	5.12	2.7	2.798	0.005
Advertising towers (poles)	5.25	2.59	4.6	2.73	2.167	0.031
Advertising on the walls of houses	5.32	2.69	4.97	2.89	1.12	0.264
Advertising on outdoor video screens	6.69	2.57	6.25	2.96	1.464	0.144
Advertising at public transport stops	5.68	2.83	4.89	2.8	2.505	0.013
Advertising on public transport vehicles	5.66	2.82	4.95	2.82	2.218	0.027
Advertising inside public transport vehicles	5.07	2.86	4.33	2.81	2.319	0.021

differed slightly and after calculating *t*-test statistically significant differences in assessment averages in these groups of respondents have not been observed ($p > 0.05$). This shows that the research participants regardless of their age the impact of outdoor advertising on consumer behaviour in the context of implementing the goals of sustainable development formation assessed similarly.

The observed research revealed the significance of outdoor advertising in implementing the goals of sustainable development and what outdoor advertising and the most effective ways of their presentation can be used to contribute to promoting the implementation of the goals of sustainable development. Statistical analysis of the data showed that the selection of appropriate outdoor advertising formats acquires special importance in shaping consumer behavior in the context of sustainable development, clarifying which outdoor advertising attracts the most users' attention and which may have the greatest impact into forming consumer habits of sustainable behavior. Another value, choosing suitable outdoor advertising formats that meet the individual characteristics of users of different ages, will not only ensure greater attention of users of different ages to outdoor advertising, increase their interest in outdoor advertising and be more efficient will reach potential users, get their response, but also increase and will encourage potential users to be more actively engaged in sustainable development processes. It is likely that a suitable choice of outdoor advertising which answers the needs of consumers of all age groups and will be eye-catching and attractive for both, younger and older consumers.

The fact that public transport is not used for advertising purposes shaping consumer behavior in the context of implementing the goals of sustainable development shows that one third of respondents often notice advertisements at public transport stops (28.9%) while more than one third of the respondents (35%) notice those advertisements on public transport

Table 2. The assessment of outdoor advertising as a means of information conveying through using public transport space shaping consumer behavior in the context of implementing the goals of sustainable development ($N = 396$; %) (source: research results)

	Often	Rarely	I don't pay attention
At public transport stops	28.9	33.2	37.9
On public transport vehicles	35.0	34.2	30.8
Inside public transport vehicles	15.3	33.3	51.3

vehicles. More than half of respondents (51.3%) don't pay attention to advertising inside public transport vehicles (Table 2). The obtained results show that more attention should be paid to advertising in public transport spaces, which could become information transmission to form consumer habits of sustainable behavior.

After summarizing the obtained results, it could be stated that in order to get outdoor advertising noticeable it is necessary to choose the right means of information and effective outdoor advertising delivery formats as well as to make the most of advertising at public transport stops, on public transport vehicles and inside public transport vehicles. To promote sustainable development and enhance societal commitment to environmental protection, social responsibility, and economic well-being, it is essential to strategically integrate outdoor advertising through appropriate media and effective presentation formats, particularly at public transport stops. Furthermore, illuminated signs, advertising on outdoor video screens and wide-screen posters could be the most effective tools impacting the possibilities of managing consumer behaviour in the context of implementing the goals of sustainable development formation through outdoor advertising.

A suitably chosen strategy and appropriate techniques of outdoor advertising should attract the attention of consumers and increase their reliance on advertising which would encourage them to choose the advertised products or services. In addition, outdoor advertising can shape consumer behavior, include in sustainable development processes, encourage to follow the principles of sustainable development by consciously directing their actions to the implementation of sustainable development goals. Outdoor advertising attracts the attention of consumers through colours, pictures, drawings and the uniqueness of visual materials. On the other hand, in order to make advertising attractive to consumers, its content should be well-thought and appropriately presented, while the image and text composition should match each other.

The data analysis showed that more than half of the research participants admitted that outdoor advertising attracts their attention through images (drawings, pictures, etc.) (58.3%), advertising design (54.2%) and its uniqueness (53.0%) (Figure 2). The following factors of outdoor advertising have a minor impact on consumers: advertising content (48.2%) and its informativeness (39.4%). The fact that advertising aims to attract the attention of consumers is revealed by the answers of respondents when a smaller part of the research respondents (7.32%) admitted that outdoor advertising does not catch their attention. However, the sound, audio presentation (18.4%) and celebrity endorsement (18.7%) have a minor impact on consumers (Figure 2), so it could be stated that they are of least importance for consumer behaviour formation through outdoor advertising.

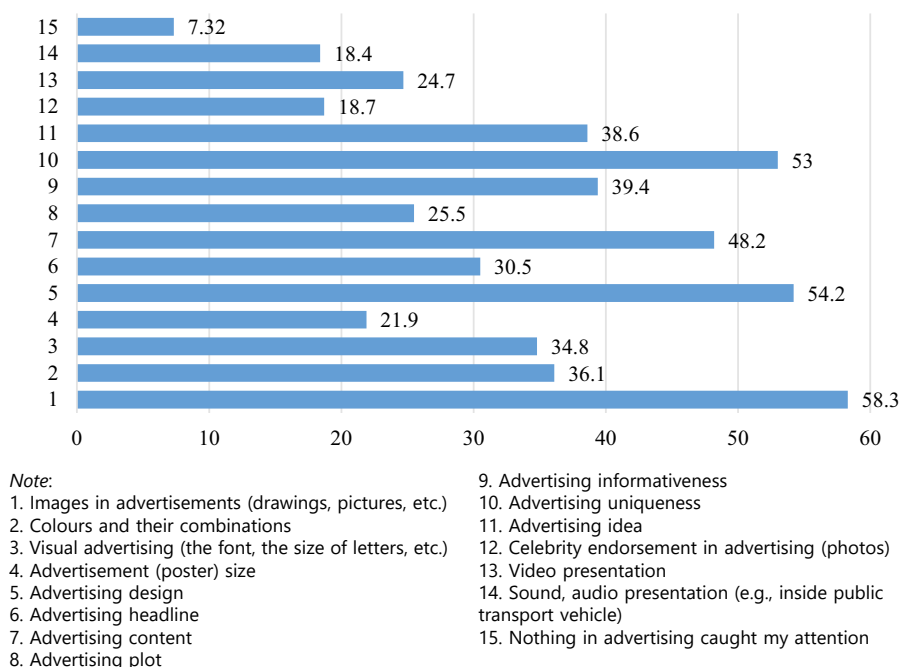


Figure 2. The assessment of outdoor advertising elements which attract the attention of customers shaping consumer behavior in the context of implementing the goals of sustainable development ($N = 396$; %) (source: research results)

Based on research insights, it is basically assumed that outdoor advertising content, its informativeness and appropriate presentation, selection of video and text compositions, design of outdoor advertising and its originality, as well as distinction of colors, pictures or visuals in outdoor advertising can be one of ways not only attracting users' attention and causing interest, but also capable of arousing the user's desire to rely on advertising when making decisions, contributing to the implementation of sustainable development goals, encouraging user behavior change, forming their interests or new in minds including lifestyle, values, beliefs and responsibilities for aspects of your choices and decisions, consciously directing your actions to reducing environmental problems, creating social welfare and ensuring economic security. To summarise the results of the empirical study, it can be argued that, in the context of sustainability management, the appropriate selection of outdoor advertising formats and elements can be one of the aspects that enable consumer attitudes towards sustainability-based behaviour in outdoor advertising. The results of the research will have continued value in the discussion on the role of outdoor advertising and the possibilities of its use in forming consumer behavior in the context of the implementation of sustainable development goals, as well as the practical significance of consumer guidelines for promoting the principles of sustainable development in outdoor advertising.

6. Discussion

The research analysis showed outdoor advertising can be one of the instruments that can influence change in consumer thinking, attitude and attitudes, decision-making, awareness and responsibility formation contributing to the implementation of the goals of sustainable development (Lopes et al., 2024; Qalati et al., 2024; Machová et al., 2022), and image formation of companies developing a commitment to environmental protection and social responsibility (Cuc & Secan, 2024). The fact that advertising could be one of the means attracting consumer's attention and impacting consumer's behaviour formation in the context of implementing the goals of sustainable development was confirmed by our research results, which shows that according to the assessment of the research respondents, their attention was attracted mostly by illuminated signs, advertising on outdoor screens and billboard posters. Similar results were also obtained by other researchers, which shows that outdoor advertising becomes attractive and visible (Narayana Reddy et al., 2023) and could be one of the means shaping the consumer's interests, habits, opinion and even changing his behaviour (Awan et al., 2016; Sarkar, 2021; Madlenak et al., 2023). Therefore, in creating a good marketing strategy, expanding the number of potential customers and searching for correct communication decisions the most important factor is the selection and application of different types of outdoor advertising, which could be one of conditions for managing consumer's behaviour formation outdoor advertising in the context of implementing sustainable development goals. This statement is supported by research results by other authors, showing that outdoor advertising marketing plays an important role in achieving sustainability goals (Ray & Nayak, 2023) and increasing tourist loyalty and promoting sustainable development of rural areas (López-Sanz et al., 2021).

In scientific research drawings, pictures, the font and the uniqueness of visual material (Zeqiri et al., 2019), advertising design (Falebita et al., 2020) as well as the advertisement headline and information content (Vrtana & Krizanová, 2023; Kovačič, 2012), the implementation and application of modern 3D technologies (Kovačič, 2012) and creative design using advanced technologies (Li & Hasan, 2022) is considered as one of the elements influencing the consumer's habit formation, whereas ad size is assessed as having a visual impact on the user (Narayana Reddy et al., 2023), our research was focused on determining the possibilities of managing consumer behaviour in the context of implementing the goals of sustainable development formation through outdoor advertising. The research results revealed the fact that images of outdoor ads, advertising uniqueness and its design as well as its informativeness are the elements that positively impact consumers. The obtained results are consistent with those of other researches who also believe that the dimensions of information provided, such as accuracy, novelty, relevance and completeness are the factors impacting the consumer behaviour formation (Vrtana & Krizanová, 2023). However, according to the results of other research works, attractive images, figures and clear words should be used in advertising design and headlines (Zeqiri et al., 2019) when concentrating on the size, colour, images and the patterns used (Akhtar, 2019). On the basis of recent facts, it is believed that information content and its informativeness as well as images and other visual tools are the most important factors, the quality of which determines the consumer's choice.

Outdoor advertising, such as advertising shields, posters on buildings or public transport vehicles, can give the desired effect only if it is implemented professionally and convey a sense of quality, is acceptable and attractive for its media, location and advertising elements. Based on the data of our research is evident that the research participants identified outdoor advertising which impacted their behaviour with illuminated signs, advertising on outdoor video screens and wide-screen posters, identified as one of the essential aspects of contributing to the achievement of the goals of sustainable development. However, it should be stated that significant lack of balanced sampling with regard to gender and age could distort the research results, while a relatively small sample made it impossible to fully reflect the entire population and made it difficult to generalize conclusions. On the other hand, after estimating that younger consumers (under 45 years of age) are the main “targets” of outdoor advertising it’s a pity that in this research this group is under-represented, therefore, in order to obtain more representative data it would be appropriate, while foreseeing the spheres of further researches, to expand the sample of participants while maintaining a balance according to different demographic indicators. Advertising identification in concrete positions and locations considered as the most effective factors attracting the attention of mass and target audience, which is mentioned in the works of other researches (Roux, 2017). While stationary billboards remain popular, particularly in less digitally saturated environments, interactive digital screens and 3D advertisements are increasingly becoming the preferred medium for advertisers looking to influence sustainable consumer behaviors. Digital billboards, with their ability to display time-sensitive content, can promote sustainability messages tailored to local contexts, creating a more personalized experience for consumers. Moreover, Augmented Reality (AR) installations are pushing the boundaries of traditional advertising by offering immersive experiences that promote eco-friendly behavior, allowing consumers to visualize the impact of their choices on the environment in real-time. This ability to connect emotionally and interactively with consumers makes these formats highly effective in promoting sustainability (Li & Hasan, 2022).

In the context of sustainable consumer behavior, advertisements using interactive and digital technology have been shown to more effectively promote sustainable practices compared to traditional billboard formats. Studies have demonstrated that digital billboards displaying sustainability messages, such as environmental conservation, tend to create a stronger emotional connection with viewers, which translates into increased willingness to act in favor of sustainability. For instance, research by Lopes et al. (2024) found that consumers exposed to sustainability-focused interactive ads were more likely to make eco-friendly purchasing decisions or engage in environmentally responsible behavior, such as reducing waste or supporting green products.

According to the research conducted by (Swaminathan et al., 2013), customers prefer stationary billboards, hand drawn posters, whereas as stated by Wilson (2023), digital billboards might be as a new type of outdoor advertising which impacts the consumer’s behaviour formation.

While stationary billboards remain popular, particularly in less digitally saturated environments, interactive digital screens and 3D advertisements are increasingly becoming the preferred medium for advertisers looking to influence sustainable consumer behaviors. Digital

billboards, with their ability to display time-sensitive content, can promote sustainability messages tailored to local contexts, creating a more personalized experience for consumers. Moreover, Augmented Reality (AR) installations are pushing the boundaries of traditional advertising by offering immersive experiences that promote eco-friendly behavior, allowing consumers to visualize the impact of their choices on the environment in real-time. This ability to connect emotionally and interactively with consumers makes these formats highly effective in promoting sustainability.

The research results obtained by us and other researchers confirmed the fact that outdoor advertising such as illuminated signs, advertising on outdoor screens and wide-screen billboards which provide relevant and understandable information, should be visually appealing and properly selected, answer the needs and expectations of consumers due to their ideas, content and information, they should appeal to people of all ages, catch their attention and increase their interest in outdoor advertising. Our research confirmed the results of other researchers, whereas conclusions confirmed the presumption about the impact of outdoor advertising on managing consumer behaviour formation implementing the goals of sustainable development. The finding research revealed which outdoor advertising and which most effective formats of their presentation and elements contained in those are the most effective in forming consumer behavior in the context of implementing the goals of sustainable development. However, getting deeper into the impact of outdoor advertising on managing consumer behaviour formation contributing to promoting sustainable development goals through the opportunities of outdoor advertising through actively employed advertising possibilities would be appropriate in the future to expand the research area and focus on understanding of various types of outdoor advertising, memorization, habit and interest formation, decision-making and differences of attitudes and opinions with regard to the respondent's gender, education, finances, place of residence and other categories.

7. Conclusions

When studying the process of forming consumer behaviour thanks to outdoor advertising, special attention is paid to its management. More than one scientist admits that outdoor advertising management can be one of the means of marketing communications in the trade and business world, which not only creates a competitive advantage and informs potential consumers about the goods and services offered.

The finding research showed the attitude of the research participants on the effect of outdoor advertising on the formation of consumer behavior in the context of the implementation of the sustainable development goals:

- The highest estimate averages show that illuminated signs, advertising on outdoor video screens and wide-screen billboards impact consumer's behaviour in the context of implementing the goals of sustainable development formation through outdoor advertising to a great degree;
- On the basis of the assessment results of the research respondents such types of outdoor advertising as banners hanging above streets, advertising towers, advertising at public transport stops, on public transport vehicles or inside public transport vehicles

are the least effective for their impact on consumer behaviour formation implementing the goals of sustainable development.

The research results showed that the assessment of different types of outdoor advertising and its impact on behaviour of customers of different ages in implementing the goals of sustainable development differs. It was found out that consumers under 45 years of age in the context of implementation of the goals of sustainable development are attracted by advertising signs, banners (advertisements hanging above the streets), advertising towers or advertising at public transport spots and public transport compared to those of 46 years of age and older, while the assessment of illuminated signs, advertising awnings on the walls of buildings and advertising on outdoor video screens did not differ significantly in groups of respondents of different ages. However, the lack of balanced sampling in terms of age made it difficult to generalize conclusions and requires a deeper analysis in a more representative sample when foreseeing the strategies of outdoor advertising so that it could have a greater impact on implementing the goals of sustainable development in customers of different ages.

In determining the possibilities of managing consumer behaviour in the context of implementing the goals of sustainable development formation through outdoor advertising the following was found out:

- The images contained in outdoor advertising (drawings, pictures, etc.), the design of the ad and its originality, as well as the content of the ad and its informativeness are named as one of the most effective ways of shaping consumer behavior in the context of implementing the goals of sustainable development.
- The provided analysis showed that according to the opinion of the research participants, sound and audio presentation (e.g., in public transport) and famous people occurring in advertising according have a minor impact on customer behaviour in implementing the goals of sustainable development. On the basis of this fact and after assessing an increasing impact of media advertising in various platforms in future it would be advisable to investigate the reasons affecting a limited assessment of these elements when including more variables, e.g., age, gender, region, etc.
- With the rapid technological developments in outdoor advertising, especially digitization and interactive technologies, it is crucial for advertisers to incorporate these advancements to ensure that their sustainability messages are engaging and relevant to modern consumers. As the younger generation, in particular, is more receptive to digital and interactive formats, targeting this audience through innovative outdoor advertising technologies will likely prove more effective in encouraging sustainable behaviors. Future research could explore the interplay between age, technological preferences, and sustainability outcomes in the context of outdoor advertising.

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