



SUSTAINABLE DIGITAL ADVERTISING

The state of sustainability within the digital advertising industry
in Finland

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Inspired by the global advertising industry-wide movement towards sustainability, the author and the commissioning company IAB Finland wanted to research the state of sustainability within Finland's digital advertising industry. The objective of this thesis was to describe the state of sustainability within the advertising industry in Finland. The thesis also aimed to define further what is understood by the term sustainable digital advertising within the Finnish advertising industry and explore the state of the carbon footprint of digital advertising.

A mixed-method approach was employed to increase the reliability and validity of the research. Data was collected through an online questionnaire (n=53) during March and April 2023 and five semi-structured interviews in September and October 2023. The target group for the online questionnaire was the marketing and advertising professionals and other professionals working closely with the advertising field in Finland. The interviewees were experienced advertising professionals representing different operators of the digital advertising ecosystem, publishers, agencies, advertisers, ad tech and industry associations. The survey and the interviews were done in Finnish. The questionnaire was analysed through a descriptive data analysis, and the semi-structured interviews were analysed through a content analysis. The analysed data was combined and interpreted for a conclusion.

The results reveal that the digital advertising industry in Finland is at the beginning of its sustainability journey. There is a lot of intent, yet more action is needed. There were 3,8% of respondents measuring the carbon footprint of digital advertising, and 24,5% were planning to. Sustainable digital advertising was considered a broad, complex, and evolving concept. The concept of sustainable digital advertising was considered to include themes like the application of three pillars of sustainability, partnership and supply chain, ethical advertising, complying with regulations and rules, sustainable products and services, carbon footprint and impact. Comparing the IAB Europe (2023b) definition to the survey results and theoretical framework revealed a difference regarding the sustainability of the product or service as an object of advertising. The main challenges in sustainable advertising were considered to be the need for common standards and knowledge. There is also not enough training and education on the topic.

More research on sustainable digital advertising and digital advertising's role in sustainability and greenhouse gas emissions is encouraged. For the advertising industry, it is recommended to continue the collaboration and open discussion and create common standards and frameworks, preferably based on research.

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1 Introduction

According to one estimation, the share of digital technologies' global greenhouse gas (GHG) emissions increased between 2013-2018 from 2,5% to 3,7% in 2018 (Ritchie, 2020). The worst scenario states that GHG emissions created by digital technologies will double by 2025 (Ferreboeuf et al., 2019, p. 4, 18.). Pärssinen et al. (2018, p.191) evaluated that the share of online advertising from the total internet infrastructure energy consumption is around 10%, concluding that digital advertising plays a significant role in energy consumption and the share of CO₂e. The most recent evaluation comes from Scope3, which estimated that digital display and streaming ads produce 7.2 million metric tonnes of emissions every year (in 30 countries) (Scope3, 2023a).

Besides the carbon footprint, advertising can also be blamed for stimulating overconsumption, unsustainable economic growth, and greenwashing. On the other hand, sustainable advertising could minimize its carbon footprint while battling against greenwashing and influencing consumer behaviour more sustainably. It is also under debate whether climate-damaging products like fossil fuel heavy industries should be allowed to be advertised at all. (Hartmann et al., 2023, pp.430-431)

This thesis describes the current state of sustainability and the understanding of sustainable digital advertising within the digital advertising industry in Finland. The data was collected in Finnish through an online questionnaire (n=53) and semi-structured expert interviews (n=5). The results of the questionnaire and the interviews describe what the advertising industry representatives in Finland think about sustainable digital advertising and to what extent the companies have carried out actions concerning sustainability. The thesis is commissioned by IAB Finland.

1.1 Background of the study

Multiple actors within the global advertising industry, like IAB Europe (2023a, p.2), WFA (WFA Planet Pledge, n.d.), and Ad Net Zero(n.d.), have created sustainability-based committees, organizations, and initiatives to tackle sustainability-related issues within the advertising industry.

The IAB Europe (2023a, p.3) conducted a State of Readiness -survey from November to December 2022 across 29 countries. The survey gained 256 respondents across 29

countries. The main finding was that sustainability was considered a critical challenge next to cookieless targeting and measurement. Over half (55%) stated starting or making significant progress towards CO2e reduction. (IAB Europe, 2023a, pp. 6-12)

Inspired by the industry-wide movement towards sustainability and the results mentioned above, the author, together with IAB Finland, wanted to do similar research in Finland to understand and compare the current state of sustainability within the digital advertising industry in Finland and also study the ambiguous concept of sustainable digital advertising further.

1.2 Objective of the study

The objective of this study is to understand and describe the state of sustainability within the advertising industry in Finland and to define further what is understood by the term sustainable digital advertising within the Finnish advertising industry.

1.3 Main research question

In order to reach the objective of this study, the following research questions were created. The main research question for this thesis is, what is the state of sustainability within the digital advertising industry in Finland?

1.4 Sub-research questions

Carbon emissions from advertising are a rising topic driven by various industry initiatives such as Ad Net Zero (n.d.) and Sustainable Standards Committee by IAB Europe(2023a, p.2). IAB Europe (2023b) also paid closer attention to that matter. Therefore, following that example, this survey aimed to describe the current situation in Finland.

The interest towards sustainable digital advertising derives from the necessity of the advertising industry to have a common language to discuss the topic. It was also a specific challenge expressed by the Sustainable Digital Advertising Committee of IAB Finland to research in-depth. Therefore, the main research questions are accompanied by the following sub-research questions:

- What is considered sustainable digital advertising?
- What is the state of carbon footprint measurement of digital advertising?

1.5 Limitations

This master thesis considers only digital advertising and leaves traditional advertising aside. The focus is on the Finnish advertising industry, and the survey and the interviews were conducted in Finnish due to the research topic and request by the commissioning company.

New information and definitions were being formed within the industry throughout the research period. Keeping up to date with the constant and fast development was a challenging task, and at the same time, there needs to be more academic research concerning this topic. The author updated the theoretical framework as often as possible.

1.6 Commissioning Company

The commissioning organization IAB Finland(n.d.) is a national entity of IAB. IAB stands for Interactive Advertising Bureau, and IAB Europe is a regional association for European media and marketing industries (IAB, n.d.). Their latest contribution to enhancing sustainability within the industry was to create the Sustainability Standards Committee in 2022 (IAB Europe, 2023a, p.17).

IAB Finland also created their own Sustainable Digital Advertising Committee (in Finnish Vastuullisen digimainonnan työryhmä) at the end of 2022 (IAB Finland, n.d.-b). The survey for this research was done in collaboration with the IAB Finland's Sustainable Digital Advertising Committee and served as a first step in defining the state of sustainability within the Finnish market.

2 Theoretical framework

The theoretical framework was created through a thorough and continuous literature review. A literature review aims to describe the conversation around the research topic (Gournelos et al., 2019, p. 29). There is a lack of academic research on sustainability and digital advertising. The academics themselves state that more research is needed in the field of sustainable advertising and that the concept of sustainable advertising should be more established (Hartmann et al., 2023, p.446).

The theoretical framework of the research is suggested to be built according to the study's objective. Within professional fields where very little or no scientific research is present, the theoretical framework is constructed through professional knowledge, which can be referred to as a professional knowledge base. The approach should be purposeful for the research and cannot be based on opinion or the author's experience. (Vilkka, 2021) Thus, due to the few academic studies towards the topic, the author also utilized relevant industry publications like data and advertising agency research papers. As this type of paper might not meet the criteria of scientific research due to its questionable reliability, it gives an overview and outlook for the situation within the advertising industry, which is purposeful for this thesis. The research articles were found through the HAMK Finna portal and Google Scholar. The publications were found through a web search, and the IAB Finland Sustainable Digital Advertising members referred to some of them. The theme of sustainability within advertising is topical as new studies and publications are continuously published around the subject; thus, the author had to adjust the theoretical framework due to new knowledge throughout the thesis process.

When talking about sustainability and advertising, the focus is usually on the environmental aspect of sustainability, specifically the carbon footprint. Besides the carbon footprint, advertising can be blamed for stimulating overconsumption, unsustainable economic growth, and greenwashing. However, sustainable advertising could minimize its carbon footprint while battling against greenwashing and, at its best, inform and shift consumer behaviour in a more climate-neutral direction. It is also under debate whether climate-negative products like fossil fuel heavy industries should be allowed to be advertised at all. (Hartmann et al., 2023, pp.430-431)

The academics state that more research is needed in the field of sustainable advertising and, at the same time, declare that the concept of sustainable advertising should be more established (Hartmann et al., 2023, p.446).

2.1 Sustainability and Digitalization

Brundtland report (WCED, 1987, p.16) defined sustainable development as "a development that meets the needs of the present without compromising the ability of future generations to meet their own needs". John Elkington advanced the concept with a triple-bottom line with environmental, economic, and social aspects. The idea of a triple bottom line or phrase of people, planet and profit has been ever since its publication has been used as a base for company reports and models like Global Reporting Initiative (GRI). (Elkington, 2013, p.121) A company that wants to be successful in corporate sustainability should embrace a holistic view of sustainability, thus considering all three dimensions of sustainability (Engert et al., 2016).

The relationship between digitalization and sustainability is vague, especially in the environmental aspect. As digitalization can reinforce the green transition, it also requires many critical resources and energy. Currently, there is a gap between the great enthusiasm around digitalization contributing to sustainability and the actual evidence backing it up. As there are initiatives addressing digitalization, like the Roadmap for Digital Cooperation in 2020, and sustainability, like the most recent Sustainable Development policies, like the EU Green Deal and Fit for the Digital Age, they do not address digitalization regarding the environment. There is no global regulation that would focus on the environmental impact caused by digital technology use. (Santarius et. al., 2023) Santarius et al. (2023) call for a Digital Green Deal to help navigate between environmental sustainability and digitalization through "smart incentives or even a full mix of regulatory, financial or information-based instruments".

2.2 Digital advertising and its ecosystem

Britannica (2023) defines advertising as "the techniques and practices used to bring products, services, opinions, or causes to public notice to persuade the public to respond in a certain way toward what is advertised". Thus, advertising can be used for purposes other than just stimulating consumption.

Adding the word digital in front of advertising refers to involving computational networks as an environment for advertising. Digital advertising is a compilation of different media types, strategies and multiple channels, including web, mobile, tablet, social, wearable, and other networked devices. The difference between digital marketing and advertising could be more

apparent. Together with public relations, these three industries step on each other and blend. Traditionally, marketing has dealt with purchase-related activities and retail, while advertising is strongly linked to media. (McStay, A., 2017, pp. 2-4)

Since 2018, digital advertising has dominated the market share over traditional advertising regarding market spending. In 2023, the digital advertising market is expected to reach 663,20 bn €, with search advertising forming the largest segment with a volume of 272,50bn €. The biggest spender is the United States with 264,60bn €. According to the estimations, in 2027, most (69%) of total ad spending will be through mobile, and most of the revenue (81%) will be created through programmatic advertising. (Statista, n.d.) The share of programmatic advertising in Finland is relatively low, at 29%, compared to, for example, Sweden, with 61%. The total value of programmatic advertising in Europe is 12,3bn €. (IAB Europe, 2023)

Even though the expenditure for digital advertising is high and constantly growing, the efficiency of advertising is diminished by issues like ad fraud and ad blocking (Wielki & Grabara, 2018). According to Wielki & Grabara (2018), even as much as half the investments go to the ad fraud ecosystem, and at worst, only 30% of the expenditure goes where it was meant to.

Advertising forms the backbone of the free internet. Alphabet, which is a holding company for Google and YouTube, generated 79% of its revenue from advertising in 2022 (224bn \$ from advertising when the total revenue was 282bn \$) (Alphabet, 2023, p.28). Meta, who owns Facebook, Instagram and WhatsApp, generated revenue of 116,6bn \$ from which 113.6bn \$ was generated through advertising, which was 97% in total (Meta, 2023). Chinese app TikTok generated 9,4bn\$ (Curry, 2023), from which four bn \$ was generated through advertising (Dencheva, 2023).

2.2.1 Digital advertising ecosystem

The digital advertising ecosystem (DAE), as represented in figure 1 below (Wang et al., 2017a, p.9), constitutes five main segments: the user, the demand side, the supply side, the market in between and data. The user is the object of advertising, which all the actors depend on. The demand side represents the buyers of advertising (brand advertisers and agencies), and the sellers of the advertising represent the supply side (publishers, app developers and sales houses). The demand and supply sides form a space of ad exchange

€. (IAB Europe, 2023) Finland is a small country with a population of 5 563 970 in 2022 (Tilastokeskus, n.d.), thus making the Finnish media market small as well. There are only a few more prominent media companies. In the listing from 2019 by Markkinointi & Mainonta, which published 50 most significant media companies, Sanoma had the first place with revenue of 913 million (million is referred to as m from here on) euro. The second biggest was Yleisradio, with 478m €, which is state-owned media and does not provide advertising services. The third one was Otava, with 286m €, and the fourth was Alma Media with 250m €. The fifth media was Keski-suomalainen, with 231m €; the rest were less than 200 million in revenue. (Kauppalehti, 2020)

2.3 The concept of sustainable digital advertising

To comprehend the foundation of sustainable digital advertising, it is beneficial to glance at the concept of sustainable marketing, which is already more established.

Sustainable marketing originates from the concept of green marketing, first defined by Hennion and Kinnear in 1976 (Dangelico & Vocalelli, 2017). According to Kumar et al. (2013), ecological marketing has evolved first to green marketing, then to greener marketing and finally to sustainable and sustainability marketing. The current concept of sustainable marketing is holistic, including all three dimensions of sustainability (Sander et al., 2021). Lunde (2018) offers a great example of a holistic definition of sustainable marketing:

Sustainable marketing is the strategic creation, communication, delivery, and exchange of offerings that produce value through consumption behaviours, business practices, and the marketplace, while lowering harm to the environment and ethically and equitably increasing the quality of life (QOL) and well-being of consumers and global stakeholders, presently and for future generations.

2.3.1 From green to sustainable advertising

There is no established definition for sustainable digital advertising or sustainable advertising found in the academic marketing literature, and even the closely related term of green advertising, which is more established, is considered rather vague (Hartmann et al., 2023, p. 446). The author collected some of the relevant definitions related to green or social advertising in a table to map out the ordinary and possibly relevant features of sustainable digital advertising. (Appendix 1). Table 1 below represents the conclusion and categorization

of the features of green advertising based on the information presented in Appendix 1. The features of green advertising were highlighted if they were new and separated from the others. Then, the features were categorized and summarised through what the feature seemed to describe or support, either the product or the service itself, the lifestyle the product or service would support, the organization or the consumers and community. The short review of concepts revealed that green advertising has been focused on promoting or highlighting sustainable features of products and services, promoting sustainable lifestyles, communicating sustainable efforts of organizations to stakeholders, or promoting awareness and influencing consumers towards sustainability, as seen in Table 1 below.

Table 1. Features of green advertising by the author

What?	Products and services	Lifestyle	Organization	Consumers / Community
Feature	<ul style="list-style-type: none"> - Promoting sustainable products and services - Highlighting the sustainable features of products and services 	<ul style="list-style-type: none"> - Promoting green/ sustainable lifestyle 	<ul style="list-style-type: none"> - Communicate stakeholders about the sustainability / environmental / preservation achievements and efforts - Presents a corporate image of environmental responsibility 	<ul style="list-style-type: none"> - Promote awareness of sustainable or environmental issues - Influence consumers behaviour towards sustainability (minimizing, correcting environmental issues)

The description of the evolution of the sustainable marketing concept by Kumar et al. (2013) could predict the evolution of sustainable digital advertising as a concept as well. In practice, this would mean that later on, in academic literature, the concept of green advertising evolves into sustainable advertising that recognizes not just the environmental perspective but also integrates the social and the economic perspective.

2.3.2 IAB Europe's definition of sustainable digital advertising

While writing this paper, IAB Europe published a joint agreement of the definition stating that "sustainable digital advertising refers to the practice of using digital marketing and advertising techniques and technologies in a way that mitigates the negative impact on the environment and society whilst also being economically viable". It includes aspects that cover the

environmental, social sustainability and economic sustainability of digital advertising. The definition concentrates only on the distribution of the ad, as they state: "This includes the digital supply chain, and the technologies used to deliver the ad from the agency or advertisers system to the end user's screen, and covers the three pillars of sustainability. This does not encompass the creative production process, advertised emissions, or activities outside of this scope". (IAB Europe, 2023b)

In May 2023, Finland's Sustainable Digital Advertising Committee also published their definition of sustainable digital advertising, a slightly modified translation of the IAB Europe's definition. The meaning and the limitations stayed the same. (IAB Finland, 2023b)

2.4 CSR-washing

CSR refers to Corporate Social Responsibility, and according to Pope and Wæraas (2016), CSR-washing refers to "the successful use of false CSR claims to improve a company's competitive standing". Taking CSR-washing to a specific context has produced further terms like greenwashing, pinkwashing, bluewashing or rainbow washing (Pope & Wæraas, 2016). Environmental sustainability-related CSR-washing is called greenwashing (Borin, 2013, pp.43-44). Pinkwashing refers to breast cancer awareness-related advertising by companies that might utilise cancer-related chemicals (Lubitow & Davis, 2011). Bluewashing refers to UN Global Compact members "paying lip service to the true goals of CSR instead of undertaking substantive but costly changes in their environmental and human rights performance" (Berliner & Prakash, 2015). Rainbow-washing refers to LGBTQ+ community-related advertising efforts with no further support to the community (Johns et al., 2022). The most recent addition to the CSR-washing group is fempower-washing, referring to companies promoting gender equality, in other words, femvertising. However, it fails to demonstrate it, whether in external efforts or the composition of its boards and leaders. (Sterbenk et al., 2022)

2.4.1 Greenwashing

Most commonly, we discuss greenwashing if we are discussing CSR-washing. Greenwashing is considered communication in terms of advertising that, with or without purpose, misleads the consumer about the environmental benefits of a product, service, or company (Borin, 2013, pp. 43-44.).

Also, providing false or ambiguous information is considered greenwashing. Greenwashing does not just impact products or services, but it can affect the image of an industry and climate change in general. Mainly, oil companies have specialised in this kind of large-scale greenwashing by using advertising worth billions of dollars to devalue and question not just the origin of climate change but also the urgency and need for climate action. (Hartmann et al., 2023, pp.435-436.)

Greenwashing seems to be common, according to a study made by the European Commission, which revealed that as many as 53% of green claims provided misleading information (European Commission, n.d.-a.).

2.5 Environmental impact of digital services

Digital services also impact the environment, which can be difficult to comprehend due to their intangible nature. The carbon footprint of digital services relates to the carbon footprint of data centres, infrastructures, and other related devices. (Batmunkh, 2022). However, there is no standardised way to assess the total energy of the Internet (Pärssinen et al., 2018), and the way the emissions should be calculated is a constant topic of debate. (Batmunkh, 2022; Freitag et al., 2022). Therefore, the following numbers are to be considered as estimations.

Ritchie (2020) estimates that the share of digital technologies' global greenhouse gas (GHG) emissions has increased between 2013-2018 from 2,5% to 3,7% in 2018. In comparison, the aviation industry was responsible for 2,5% to 3,5% (depending on what is included) of global greenhouse gas emissions in 2018 (Ritchie, 2020). Freitag et al. (2022) estimated that ICT (including TVs and other consumer electronics) would be responsible for 2.1-3.9% of global greenhouse gas emissions in 2020. The worst scenario states that GHG emissions created by digital technologies will double by 2025 (Ferreboeuf et al., 2019, pp. 4, 18.). The growth of needed energy consumption is rapid, reported as high as 9% yearly. Ferreboeuf et al. (2019, p.4) recognise two issues behind this growth: the increase in video and digital gadgets.

Nevertheless, rather than just the video format, the quality of the video matters as well. When comparing the carbon footprint of TikTok, YouTube, Facebook, and Netflix - the highest CO₂ emissions were produced by Netflix due to its high-resolution video delivery and number of its users. (Batmunkh, 2022). The other reason behind the growing carbon footprint is the increased consumption and usage of mobile phones and other digital equipment with a brief lifespan. In particular, high-income countries are overconsuming digital technologies. (Ferreboeuf et al., 2019, p.4.).

Other than the carbon footprint, outdoor advertising has been connected to light pollution, especially in densely populated areas like Asian countries. In Hong Kong, the residents have reported difficulties sleeping due to billboards. In Taiwan, 73% of respondents stated that advertising signs are the main reason for light pollution. (Ho& Lin, 2015)

2.5.1 Carbon footprint of digital advertising

The different estimations and ways to calculate digital advertising-related carbon emissions vary greatly. According to Pärssinen et al. (2018, p.191), the energy consumed by digital advertising was estimated to be around 106,59 TWh. This would represent around 10% when the total Internet infrastructure consumed 1059 TWh of energy. As in CO₂e emissions (transition from energy consumption by using an average energy grid mix variable), digital advertising created 60Mt CO₂e in 2016. The energy consumption of fraudulent advertising is 23% of the total online advertising energy consumption. Overall, digital advertising plays a significant role in energy consumption and the share of CO₂e. (Pärssinen et al., 2018, p. 191)

The most recent estimation comes from Scope3, which announced that according to their latest emission data, digital display and streaming ads produce 7.2 million metric tonnes of emissions yearly. Display advertising accounts for 3.8 million metric tons, streaming 3.4 million metric tonnes. This estimation included the top 30 countries by volume of impressions but excluded China and Russia, and the streaming part does not include TVs as devices. Thus, the total amount is higher. (Scope3, 2023a, p.6)

In the Q1 report (Scope3, 2023b, pp.10, 14), Scope3 stated that programmatic advertising could create as much as 215 000 metric tonnes of CO₂e emissions monthly throughout the five biggest economies: Germany, the US, Great Britain, France, and Australia and ad selection amounts to as high as 60,7% of emissions in ad impressions. In the calculations, Scope3 considers ad selection emissions, media distribution emissions, consumer device emissions and creative distribution emissions. (Scope3, 2023b, p.9)

Another estimation for carbon emissions produced by advertising comes from a data agency 55, which estimated the emissions of a fictive but real-life advertising campaign that concluded that an advertising campaign could, at its worst, create as much as 323 tons of CO₂e, which would correspond to around 160 return flights from Paris to New York. Of the 323 tons CO₂e, 35 tons CO₂e would originate from the creative production and 288 tons CO₂e from the campaign broadcasting and targeting. (Moulard et al., 2022, pp. 8, 25.)

Moulard et al. (2022, p. 22) also introduced a new metric for the advertising industry, gCO₂eqPM, which means CO₂e per 1000 impressions. The new metric helps evaluate different channels and formats, and it can be another metric to use to evaluate the efficiency and success of ad campaigns (Moulard et. al, 2022, pp. 8,22.). Scope3 (2023b, p.9) also mentions gCO₂pm, which refers to grams of carbon dioxide equivalent to greenhouse gasses per 1000 impressions.

Good-Loop (2022a, p.4) has estimated that the delivery of an average advertising campaign in the United Kingdom creates approximately 5,4 tons of CO₂e emissions. Their carbon footprint calculator considers the size of the advertisement in megabytes, the country's electricity grid mix emission factor (UK 300g CO₂e /kWh.) and the number of impressions the advertisement receives (Good-Loop, n.d.-a).

Good-Loop conducted a study with 400 marketers from the UK and US, primarily representing brands and agencies, to understand the marketer's perception of advertising and the climate crisis (Good-Loop, 2022b, p.2). They found out that the vast majority of marketers, 87% in the US and 90% in the UK, believe that the advertising industry needs to take responsibility for reducing carbon emissions. Surprisingly, 61% of US marketers and 71% of UK marketers already track the carbon emissions generated by their digital advertising campaigns. (Good-Loop, 2022b, p.3; Good-Loop, 2022c, p.3) The difference is remarkable compared to the IAB Europe (2023a) survey, which stated that only 20% responded to measure the carbon emissions from their digital advertising.

2.5.2 Greenhouse Gas Protocol

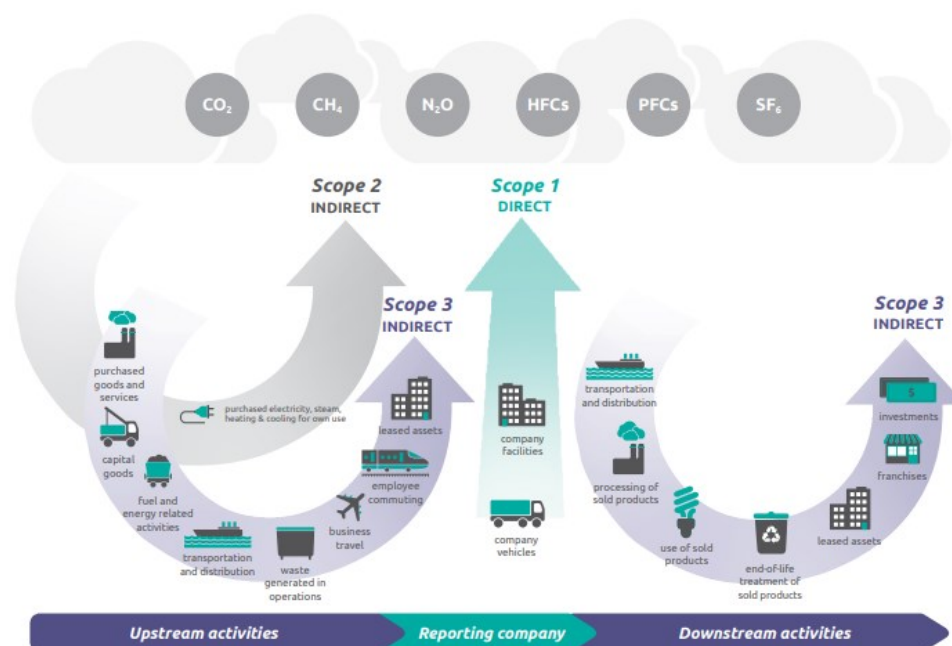
One of the most common standards to measure greenhouse gas emissions is the Greenhouse Gas Protocol (GHG Protocol), which was launched in 1998 and has multiple stakeholders from the World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD) to business, governments, and non-governmental organisations. (Greenhouse Gas Protocol, n.d., p.4)

The GHG Protocol aims to create and develop globally accepted and adopted standards to measure and lower greenhouse gas emissions (Greenhouse Gas Protocol, n.d., p.4). According to the GHG Protocol, greenhouse emissions are divided into three scopes: 1, 2 and 3, as shown in figure 2 (Greenhouse Gas Protocol, n.d.-a, p.5). Scope 1 includes all direct emissions from the company's owned or controlled sources like their facilities and company vehicles. Scope 2 includes indirect emissions from the energy consumption of the

company. Scope 3 includes indirect emissions from everything else, the emissions in the value chain, so basically the purchased products and services. Scope 3 is further divided into upstream and downstream activities. Upstream activities are the activities that happen in order to produce the product or service for the purchase and can include factors such as leased assets, employee commuting, and purchased goods, and downstream activities are the activities that happen after the purchase, like processing and use of sold products, transportation, and investments. (Greenhouse Gas Protocol, n.d., pp. 4-5, 27)

Scope 3 emissions can have a massive impact. Across industries, on average, the Scope 3 emissions represent as much as 75% of all emissions (CDP, 2022, p.6). Very often, advertising is included in the Scope 3 emissions, as it is usually not the main product of the companies. However, according to CDP (2023, p.11), 71% of disclosed companies reported for Scope 1 and 2 emissions and only 41% reported for Scope 3 emissions. The same report states that Scope 3 upstream emissions are 11.4 times greater than the emissions coming from operations (Scope 1 and/or Scope 2) (CPD, 2023, p.4).

Figure 2. Overview of GHG Protocol scopes and emissions across the value chain (Greenhouse Gas Protocol, n.d.-a, p.5).



2.6 The state of sustainability in digital advertising

Multiple actors within the global advertising industry, like IAB, WFA, and Ad Net Zero, have created sustainability-based committees, organisations, and initiatives to tackle sustainability-related issues within the industry (IAB Europe, 2023a, p.2; WFA Planet Pledge, n.d.; Ad Net Zero, n.d.). This chapter aims to describe some of the different initiatives on different levels of the industry to provide an overview of the current situation and showcase the initiatives that work as trailblazers for sustainable digital advertising.

2.6.1 IAB Europe – the committee, survey, and the definition

IAB Europe created the Sustainability Standards Committee in 2022. They aim to bring the advertising industry together and create a sustainable delivery of digital advertising. They also agreed upon the common definition of sustainable digital advertising. (IAB Europe, 2023b). The Sustainability Standards Committee surveyed the advertising industry's readiness for sustainability with a survey (IAB Europe 2023a, p.3), and this survey has served as a benchmark for this research as well.

The IAB Europe (2023a, p.3) State of readiness survey was conducted from November to December 2022 across 29 countries. The survey gained 256 respondents across 29 countries. The digital advertising ecosystem was widely presented, with the most significant share coming from ad tech with 29% of respondents, the second biggest with 22% from agencies and then 19% from publishers, 9% from industry associations, and 12 % from others, but only 9% of advertisers. (IAB Europe, 2023a, pp. 2-3)

One of the key findings was that sustainability was mentioned as a key challenge next to cookieless targeting and measurement and before privacy and the economic environment. More than half (55%) stated having started or made significant progress towards CO₂e reduction. The most important things to do in order to drive CO₂e reduction were to measure the CO₂e (35%) and to create consistent standards (33%). (IAB Europe, 2023a, pp. 6-12)

Measuring the emissions produced by the delivery of ads is still rare, with only 20% of the 29% not knowing if they are, and 51% stated that they are not measuring the emissions. Sustainability was considered necessary for their employees and partners but also as a strategic goal. The main challenges were stated to be the lack of education (33%) and the lack of standards (30%). (IAB Europe, 2023a, pp. 13-15)

2.6.2 Other industry association initiatives

The World Federation of Advertisers, commonly known as WFA, represents significant brands and industry organisations and operates globally in 60 markets (WFA, n.d.). They have an initiative called Planet Pledge, a CMO-led framework to help meet the UN Sustainable Development Goals. Within the pledge, they, for example, commit to the global Race to Zero campaign and scale the marketing departments. They have also generated a global guideline for using environmental claims correctly. Significant brands like IKEA, Unilever and Mondelez have signed the pledge. (WFA Planet Pledge, n.d.)

Ad Net Zero is "the advertising industry's drive to reduce the carbon impact of developing, producing, and running advertising to real net zero". The initiative is primarily UK based but has no spread to the US. It was initiated by the UK Advertising Association, IPA and ISBA, but it now involves companies like Amazon, Google, and Meta and the above-mentioned industry organisations, IAB and WFA. They have created an action plan business to direct the industry towards carbon neutrality with five steps. It is recommended first to reduce the emissions from the business operations, secondly from the advertising production and thirdly from the media planning and buying. The fourth step recommends using awards and events in emission reduction. The fifth step encourages the use of the power of advertising to develop more sustainable behaviour. (Ad Net Zero, n.d.)

Closely related to Ad Net Zero is Ad Green, which is based in the UK and is part of the Advertising Association. They aim to lower the negative environmental impacts of production and offer carbon calculators for production activities. (Ad Green, n.d.)

2.6.3 Initiatives by professionals

Other than the initiatives formed by the industry organisations, some climate-concerned industry professionals have come together and started movements to develop a more sustainable advertising industry.

Clean Creatives represents a group of advertisers and PR professionals that commit to ending collaboration with fossil fuel-related companies. They could be described as an anti-fossil fuel network. They state that an agency's most significant impact is with the fossil fuel clients they serve (Clean Creatives, n.d.). So far, 450 agencies and 1000 individuals have pledged not to work with fossil fuels (Clean Creatives, 2023). They criticised Ad Net Zero for collaborating with sponsors that work with fossil fuel giants like ExxonMobil but also for

excluding the emissions from the companies the agencies promote in their action plan (Clean Creatives, 2023). Clean Creatives' director Duncan Meisel stated, "Ad Net Zero is intended to be 'the ad industry's response to the climate crisis,' but it is backed entirely by agencies that work with major fossil fuel polluters, and it includes no guidelines on what clients' agencies should work with," said Clean Creatives' director, Duncan Meisel. (Ormesher, 2023)

Purpose Disruptors was initially UK-based and founded by three climate-concerned advertising professionals but has evolved to a network of 4 000 industry insiders that gathers, shares information, and organises events. They state that their mission is to transform the advertising industry climate transition forward. (Purpose Disruptors, n.d.) If Clean Creatives criticise Ad Net Zero, Purpose Disruptors collaborate with them. Purpose Disruptors initiated the #ChangeTheBrief alliance, which brings the industry players together to promote sustainability in their channels and, therefore, contributes to Ad Net Zero action 5, to use advertising to "promote sustainable consumer choices and behaviours" (Change the brief, n.d.).

Creatives for Climate is a non-profit global network and community of thousands of creative industry professionals. They aim to build a "just and regenerative world" using their creative skill set. They have launched a platform where participants can share knowledge and support each other. (Creatives for Climate, n.d.)

2.6.4 Companies focusing on sustainable digital advertising

Scope3 (2023a, p.18) is a company founded in January 2022 states to be on a mission to "systemically decarbonise media and advertising". Scope3 offers solutions to measure and reduce emissions (Scope3, 2023b, p.2). Scope3 also produces sustainability reports covering their estimations of global and regional digital advertising relevant emissions (Scope3, 2023a; Scope3, 2023b).

Good-Loop is a United Kingdom-based ethical advertising agency that offers ad formats that enable the target consumers to share advertiser-funded donations to charities in exchange for watching the advertisement (Good-Loop, n.d.-b). Good-Loop also researches and publishes information and studies around the theme. Their recent study was conducted with 400 marketers from the UK and US, primarily representing brands and agencies, to understand the marketer's perception of advertising and the climate crisis. (Good-Loop, 2022b, p.2) They found out that the vast majority of marketers, 87% in the US and 90% in

the UK, believe that the advertising industry needs to take responsibility for reducing carbon emissions. Amazingly, 61% of US marketers and 71% of UK marketers already track the carbon emissions generated by their digital advertising campaigns. (Good-Loop, 2022b, p.3; Good-Loop, 2022c, p.3) The difference is remarkable when compared to the IAB Europe (2023a, p.13) survey, which stated that only 20% responded to measure the carbon emissions produced by the delivery of digital advertising.

2.7 Corporate Social Responsibility in Finland

European Commission (2001) refers to CSR, in other words, corporate social responsibility, is “a concept whereby companies decide voluntarily to contribute to a better society and a cleaner environment”.

Ministry of Economic Affairs and Employment of Finland (n.d.) have a bold statement on their website that Finnish enterprises “have every potential to be among the world’s leaders in corporate social responsibility”. In practice, the Ministry of Economic Affairs and Employment of Finland is responsible for the government's CSR, and their policy is to produce information, build dialogue between all the different stakeholders, enable building capacity, e.g. through training and take care of the necessary legislative actions. (Ministry of Economic Affairs and Employment of Finland, n.d.)

According to the FIBS (2023, p.7) Sustainability in Finland 2023 study Finnish companies have understood the importance and benefits of corporate responsibility and already reflect it in strategy and management. However, they also found out that the basic level of corporate responsibility is lacking, the strategy and plans are not reflected in to operations. For example as 46% of respondents had a Net Zero target, but only 27% had actually developed a science-based plan to achieve it. Majority with 85% supported the UN Guiding Principles on Business and Human Rights, but less than 40% had a relevant risk analysis or conducted due diligence process. As many as 74% of respondents published a sustainability report. While sustainability was considered an innovation driver, the companies did not want to quit their unsustainable business operations. The lack of skills and knowledge was considered a challenge. (FIBS, 2023, pp.7, 13, 14)

2.8 Societal and Regulatory Trends on Sustainable Digital Advertising

There are three megatrends in 2023 that are closely connected to sustainable digital advertising: digitalisation, the power of data and the expansion of corporate responsibility (Sitra, 2023). The rising interest within the advertising industry towards the carbon footprint is also one, maybe not societal, but an advertising industry trend. Concerning digital advertising and regulations – the themes that intersect are data, privacy, greenwashing, and carbon footprint.

2.8.1 Societal trends concerning digital advertising

Digitalisation plays an important role, and it has penetrated all the areas of our daily life. Everybody and everything is online – therefore, there are also advertisers. Since 2018, digital advertising has dominated the market share over traditional advertising in terms of market spending. In 2023, the digital advertising market is expected to reach 663,2 bn €. (Statista, n.d.)

The increasing amount of data we have online also shifts more power to the digital platform giants like Meta and Google. A lack of rules and transparency can be dangerous and risky for any of us. EU has woken up and is making new regulations to manage the safety and fairness of digitalisation in a better manner. (Dufva & Rekola, 2023, p.47)

The companies are increasingly interested and pushed for more sustainable products, services, and operations. Companies and governments are forced to rethink and lower their CO2 emissions. (Sitra, 2023)

2.8.2 Finnish legislation: Consumer protection act

Advertising in Finland is affected by the Consumer Protection Act (Kuluttajansuojalaki 38/1978, Chapter 2). Consumer Protection Act Chapter 2 is dedicated to marketing, and at its core, it requires that marketing is not against good habits and inappropriate behaviour. Marketing has to follow generally acceptable societal values, such as not hurting human dignity political and religious commitment. It also denies any discrimination and endangering health, general safety, or the environment. Among other things, it also denies providing misleading information about the product or service and its features. (Kuluttajansuojalaki 38/1978, Chapter 2)

Even though the chapter does not mention environmental aspects, the Consumer Ombudsman has specific guidelines for environmentally oriented claims in marketing based on the Consumer Protection Act and past rulings by the Consumer Ombudsman and the Market Court. The use of environmentally oriented claims guidelines states, e.g., that the importance of environmental impact should be assessed, the impact should be clearly and precisely expressed, the marketing should be based on overall impression and facts, and the life cycle of the product should be known if there are some generalisations like "environmentally friendly" made. (Kuluttajavirasto, 2002)

2.8.3 EU General Data Protection Regulation

Utilising personal data in digital advertising is one pain point regarding sustainable digital advertising. The strictest privacy law in the world, the General Data Protection Regulation (GDPR), guides the protection and management of personal data within the EU. Any organisation wanting to operate within the EU has to comply with GDPR. The regulation's core is that personal data may not be collected or processed without well-informed and voluntary consent. (GDPR. EU, 2018)

2.8.4 EU European Green Deal

European Green Deal is the new growth strategy for the European Union, which aims to make the EU a "modern, resource-efficient and competitive economy" (Directive 2022/2464/EU, article 1). Additionally, the European Green Deal aims for the EU to be climate neutral by 2050 and reduce greenhouse gas emissions by over half (55%) by 2030 (European Commission, n.d.-b).

European Economic and Social Committee, EESC, has encouraged the advertising industry to join this effort of reducing its carbon footprint in a joint effort and offer free support for ecologically responsible initiatives. They also encourage the industry to participate in strengthening the regulations to combat, e.g., greenwashing. (European Economic and Social Committee, 2021a) According to multiple studies, advertising is important to keep the economy competitive, so EESC is looking for ways the industry could stay efficient and contribute to sustainability goals for the European Union. Sustainable advertising should recognise the need for more sustainable solutions in every campaign, e.g., reducing energy consumption in digital billboards. EESC highlighted the need to reduce greenwashing,

limiting the environmental harm caused by advertising and supporting the green transition. (European Economic and Social Committee, 2021b)

2.8.5 EU Corporate Sustainability Reporting Directive

The Corporate Sustainability Reporting Directive (CSRD), entered into force in January 2023, is considered part of the EU Green Deal. The new reporting directive sets modern and firm rules for reporting but also forces more companies to commit to sustainability reporting. Large companies with public interest and some SMEs will be subjected to CSRD. The reports, according to the new directive, will be published in 2025. Companies subject to CSRD must report according to the recently published European Sustainability Reporting Standards (ESRS). The previous non-financial reporting directive (NFRD) rules will remain tentative until CSRD is in full force. (European Commission, n.d.-c) As CSRD will demand reporting, e.g., Scope 3 emissions, to some extent, the advertising industry should be conscious of the upcoming reforms (Directive 2022/2464/EU, article 47). Additionally, the EU will later supplement CSRD with sustainability reporting standards more proportionate to SMEs (Directive 2022/2464/EU, Chapter 6a, article 29c).

2.8.6 EU Proposal for Green Claims Directive

EU aims to reduce greenwashing through a new proposal for a green claims directive in March 2023. Environmental claims are increasingly visible in everyday marketing, and it is hard for a consumer to evaluate how truthful the claims are. The new proposal would make sure that the companies would use only valid and relevant certificates, labels, and claims. The proposal suggests that companies should confirm their claims through a specific set of criteria, proposes a third-party verifier for the claims mentioned above, and suggests schemes for labelling for more consistency and transparency. The study made by the European Commission revealed that more than half of 53% provided misleading information, and 40% had no supporting evidence. (European Commission, n.d.-a.)

2.8.7 Sustainable Development Goals and digital advertising

The Agenda for Sustainable Development is a plan for "peace and prosperity for planet and people", which was adopted by all the United Nations (UN) members in 2015. The agenda is based on 17 Sustainable Development Goals (SDG) that cover social and environmental

issues while considering economic growth. The goals and strategies were aimed at countries but could be utilised as a guideline by any organisation as well. (United Nations, n.d.)

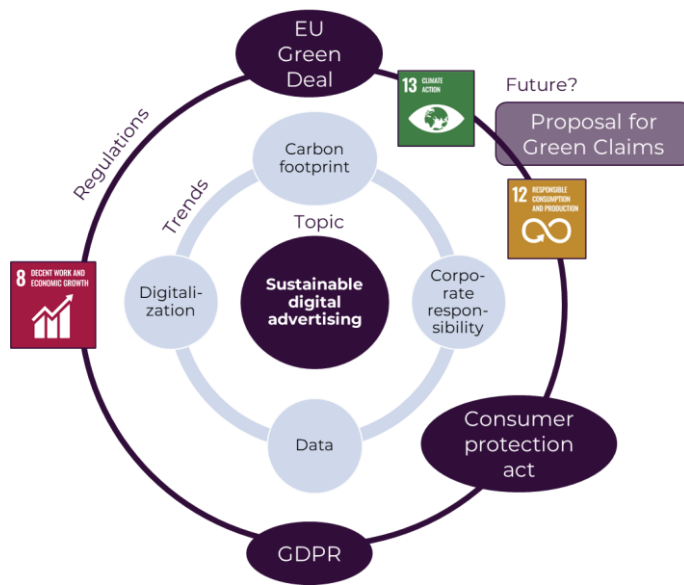
Considering how digital advertising could contribute to the UN Sustainable development goals, the topic touches most closely on Goal 12, Sustainable consumption and production. Sustainable digital advertising can help with being part of and promoting sustainable business practices but also communicate relevant information related to sustainability. (United Nations, n.d.-b)

Sustainable development Goal 8 (United Nations, n.d.-a), decent work and economic growth can also be supported by sustainable digital advertising. According to a European Economic and Social Committee (2021b), for a euro spent on advertising, Europe's economy is amplified by up to 5-7 times. So, rather than cutting down on advertising completely, finding a balance between efficient and sustainable advertising is more beneficial. Also, digital advertising could be utilised in advancing goal 13 (United Nations, n.d.-c), Climate action, by raising awareness about climate change-related issues.

2.8.8 Conclusion of societal and regulatory trends affecting digital advertising

As concluded in figure 3., made by the author, the societal trends affecting the topic are digitalisation, data, the rise of corporate responsibility and the industry interest and need to reduce the carbon footprint of digital advertising. The regulations and UN sustainable development goals are on the outer sphere, providing the frames for sustainable digital advertising. The regulations are placed closer to the trends they are connected to. Digitalisation could be seen as a force of economic growth for Goal 8; GDPR ensures that our data is protected, and the Consumer Protection Act falls between the data and corporate responsibility. The carbon footprint is directly linked to the EU Green Deal. Goal 13 for climate action and Goal 12 for sustainable consumption and production are connected to both carbon footprint and corporate responsibility, and the new proposal for the green claims initiative falls in between them.

Figure 3. Conclusion of societal and regulatory trends affecting digital advertising by the author



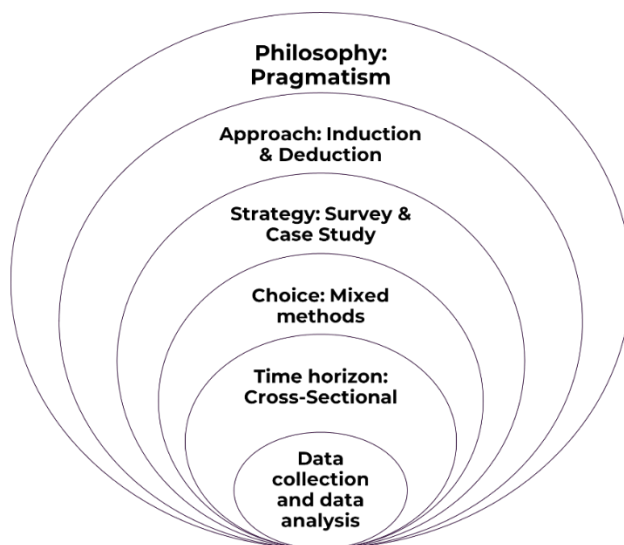
3 Research design

3.1 Research philosophy

Saunders et al. (2009, p.108) introduce the research onion as a graphical illustration to demonstrate the research design from research philosophy to data collection and analysis. It is one of the most comprehensive frameworks for research, showcasing all the significant decisions the researcher has to make for any research project. The framework consists of six layers: philosophy showcasing the researcher's view on philosophical position, the approach applied, research strategies, choices between methods, the timelines, and the means of data collection. (Alturki, 2021, p.1; Saunders et al., 2009, p.108)

In figure 4. below, the author has adapted the research onion of Saunders et al. (2009, p.108) to describe the basis of this research. The nature of this research corresponds to pragmatism. Pragmatism is a research philosophy that focuses on answering the research question as well as possible, enabling variations in epistemology (what is acceptable knowledge), ontology (view of the nature of being), and axiology (view of the role of values). (Saunders et al., 2009, pp.109, 119) Thus, rather than the researcher following the research philosophy, the research follows finding an answer to the research question, utilising appropriate approaches and methods (Saunders et al., 2009, p.109).

Figure 4. Research onion adapted from Saunders et. al. (2009, p.108) by the author



There are two different research approaches: inductive and deductive. In a simplified manner, the deduction approach starts from a theory, forms a hypothesis, makes observations, and, in the end, will or will not confirm the theory. The induction approach, however, starts from the observation, searches for a pattern, creates a hypothesis and results in a theory. (Alturki, 2021, p.4) While deduction emphasises scientific data, quantitative data, and sufficient samples, the inductive approach emphasises gaining understanding, research context, and qualitative data and is less concerned with generalisation (Saunders et al., 2009, pp. 124-127). This thesis combined the approaches of deduction and induction. Theoretical framework and the IAB Europe (2023a) survey gave the framework for the research in a deductive manner. However, at the same time, the novelty of the topic and researching the concept of sustainable digital advertising required a more inductive approach.

The objective of the research and the research question, the time, and the resources available are a few of the criteria driving the choice of research strategy (Saunders et al., 2009, p.141). This thesis applied a combination of the survey and case study as research strategies. A survey is a typical part of the deductive approach and a common strategy in business research. It aims to collect quantitative, comparable data and answers questions like what, who and how much. (Saunders et al., 2009, p.144) Robson in Saunders et al. (2009, p.145) describes a case study as a "strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within real-life context using multiple sources of evidence". This thesis seems to be witnessing the first steps of the idea of sustainability entering the digital advertising industry in Finland. The theoretical framework and the previous results from the European level set a contemporary stage for a new paradigm in the advertising industry, which the experts in the fields testify through the interviews.

The thesis applied mixed methods research, sequentially combining the qualitative and quantitative methods. The data was analysed separately. The time horizon for the study is cross-sectional, studying a specific topic at a specific moment. (Saunders et al., 2009, pp.152, 155) The data collection method was an online questionnaire, which was analysed by descriptive analytics and semi-structured interviews, which were analysed by content analysis.

Sustainability in digital advertising is such a new concept that there is no well-established definition for sustainable digital advertising. Despite the novelty of the theme, this research also reflects the State of Sustainability study done by IAB Europe. Therefore, the purpose of

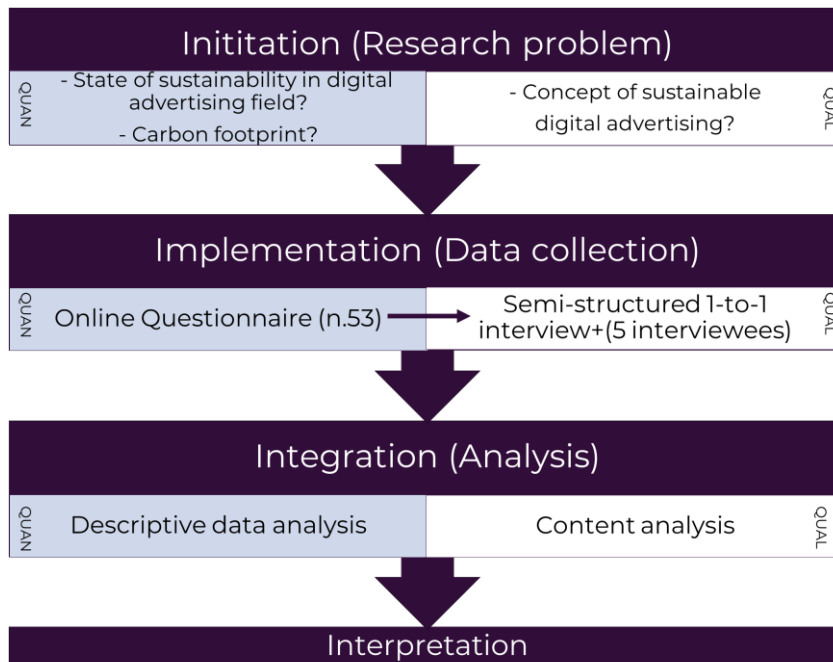
this study could be described as exploratory and descriptive. As the research is exploratory in terms of the Finnish concept of sustainable digital advertising, it is descriptive following the IAB Europe(2023a) study as mentioned earlier done Europe-wide concerning the current state of sustainability within the advertising industry. As exploratory explores new views and phenomena, descriptive studies are more of an extension of an exploratory study (Saunders et al., 2009, pp. 139-140).

3.2 Research phases

The research applied mixed methods, which combines qualitative and quantitative research methods in a single study, whether in the data collection or analysis phase (Hurmerinta-Peltomäki & Nummela, 2006). Quantitative research refers to collecting numerical and quantifiable data (Saunders et al. 2009, p.151). The questionnaire was quantitative, with mostly standardised questions. This was mainly due to the possibility of comparing the results to the IAB Europe(2023a) study. Qualitative research covers an extensive range of methods, but often, the common nominator is that the data is nonquantitative, such as text, interview transcripts or even visual documents like photographs. Due to the variety of data, the data analysis can be rather theoretical and abstract. (Saldana, 2011, pp. 4, 89)

Figure 5 represents the research's methodological phases referred to by Creswell 2003 in Hurmerinta-Peltomäki& Nummela (2006, p.441): the initiation, implementation, integration with analysis and interpretation and its application to this thesis. Initiation includes the definition of research problems. The left side represents the applied quantitative research method, and the right represents the qualitative research method. The research problem can apply appropriate research methods. Implementation phase decision of data collection methods. As the survey is an excellent data collection method for the state of sustainability within the industry, the interview serves as a better research method for sustainable digital advertising. The online questionnaire was analysed through a descriptive data analysis and the interviews with content analysis. In the end, all the information is interpreted.

Figure 5. Research design adapted from (Creswell 2003 in Hurmerinta-Peltomäki & Nummela, 2006) by author



3.3 Mixed methods

Applying mixed methods research requires more time and resources than just one research method; thus, evaluating its necessity is important for the researcher (McKim, 2017; Molina-Azorín, 2011, p.7). Despite the extra need of effort, applying mixed methods research design is getting more popular across the disciplines, probably due to its benefits like the capability of addressing complex issues better than just applying one method (Hesse-Biber, 2010, pp.1-3; McKim, 2017). Other than that, and especially within the field of business, using mixed methods increases the validity of the research, helps create knowledge that guides the collection of data, and can also help in gaining a deeper and broader understanding of the phenomenon (Hurmerinta-Peltomäki & Nummela, 2006). Molina-Azorín (2011, p.18) found that mixed methods research gets more citations; thus, it might be considered a more valuable method for management research.

According to Hesse-Biber (2010, pp.4-5), the most common reasons researchers use mixed methods are triangulation, complementarity, development, initiation, and expansion. With triangulation being the most common, the researcher is enhancing the credibility of the findings by combining the data collected in multiple methods and thus allowing the observation of multiple dimensions of the same problem. Complementarity refers to a more

holistic understanding of the problem and the results due to various research methods. The third reason is development, which refers to the ability to use one research method in developing the other, like utilising the statistical data collected in a quantitative method to develop interview questions for the qualitative part. The fourth reason is initiation, which refers to the results of one study inducing a new study with its contradictions or questions. This can lead to the fifth reason, expansion, which suggests that mixed methods research inquiry can gain more breadth and range. (Hesse-Biber, 2010, pp.4-6)

The qualitative part was essential in defining and researching what sustainable digital advertising represents to professionals. This was executed by interviewing experienced digital advertising professionals from different sectors of the advertising ecosystem, advertisers, ad tech companies, agencies, publishers, and an industry association. Within the survey, there was also an open question followed by a categorical question to further define the concept.

3.4 Quantitative method

3.4.1 Survey

The data collection method used for the quantitative part of the research was a survey, and more specifically an online questionnaire mostly due to the convenience of reaching the target audience as well as possible but also for the goal of reflecting the IAB Europe (2023a) State of Sustainability - survey for the Finnish market.

A survey as a research strategy is very popular in management and business research and is especially recommended for exploratory and descriptive purposes. The survey allows an easy and affordable way of collecting vast amounts of data but also enables comparison of data with standardised questions. (Saunders et al., 2009, p.144) The survey is good for describing what most people think about the issue. However, a very common limitation of a survey as a research method is the respondent's need for motivation to respond, whether through force, incentive, or passion towards the topic. This might polarise the answers. (Gournelos et al., 2019, pp.57-58) The incentive to answer the survey was a 1-euro donation for every submitted answer for the Luonnonperintösäätiö. The small incentive was thought to match the theme of the survey but also to attract the target audience with an interest and motivation to contribute to the survey itself.

3.4.2 Purposive sampling

The sampling used in this survey and with the interviews can be described as purposive sampling. When the sampling is strategically targeted at specific people to create meaningful results, the sampling is called purposive (Gournelos et al., 2019, p. 122). Purposive sampling is good for very small samples, and it enables to use researchers own judgement to select cases that will best answer the research questions. The purposive sample can't be seen as statistically representative of the total population. However, the logic behind the selection is based on the research questions and the study's objective. (Saunders et al., 2009, pp.237-239) Purposive sampling is especially good when the researcher wants to get an idea of the phenomena rather than observe the quantitative presentation, and overall, this sampling method is very typical for an online survey (Kananen, 2014, p.177).

The target audience for the survey was marketing and advertising professionals and other professionals working closely with the advertising industry in Finland. The targeted audience was described in the introduction text of the survey at the beginning of the survey. The survey was shared through all the marketing communication channels of the organisation (social media channels and internal Slack channels), newsletter, member newsletter and the website. It was also promoted through paid marketing using appropriate and purposive target groups (advertising and marketing professionals in Finland). Markkinointiliitto(n.d.) is an association for marketing professionals in Finland and a partner for IAB Finland, and they also promoted the survey in their channels. The background and working position were also researched in the demographics section of the survey. There was no need to disqualify any respondents due to unqualified backgrounds.

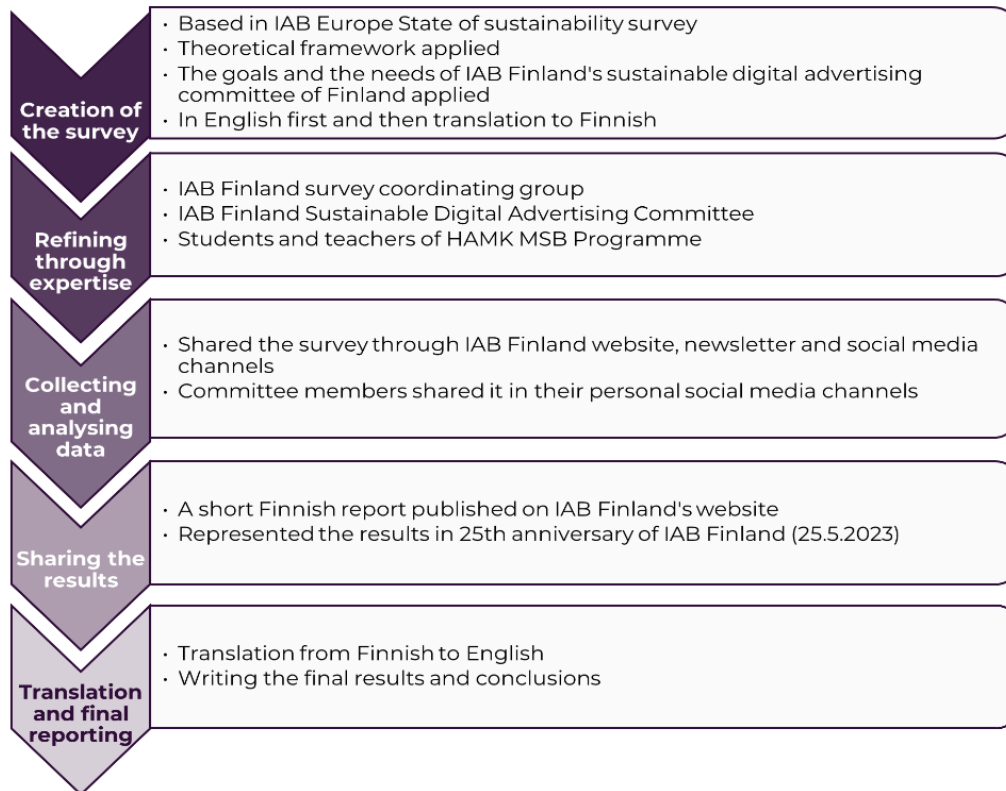
3.4.3 Survey creation

The process of the survey is represented in the figure 6. The survey was done with IAB Finland's Sustainable advertising committee research group, and it was reflected on the IAB Europe (2023a) survey done in February 2023.

The creation of the survey consisted of several stages. During the first part of the survey creation, the author used the IAB Europe survey as a benchmark but modified the survey to respond to the needs of the IAB Finland Sustainable Digital Advertising Committee, the Finnish market, and the means of the thesis. This part was done in English. In this stage, the theoretical framework was applied, and questions about the definition of sustainable digital

advertising were added, as were some more defining questions concerning the company's sustainability.

Figure 6. Process description of the survey creation by the author



IAB Finland Sustainable Digital Advertising Committee formed a survey coordinating group with five members, the author included. The structure of the survey was shown to the survey coordinating group, who gave feedback, and the author made the recommended edits. After the content was approved by the survey coordinating group and the thesis coordinator, the survey was translated into Finnish and refined further. In this stage, the author asked some of the Häme University of Applied Sciences Management of Sustainable Business Finnish-speaking students and a Finnish-speaking teacher from the same degree to review the questions and content in Finnish.

During the final stage, the survey was created with SurveyPal and shared with the whole IAB Finland Sustainable Digital Advertising Committee. All the members had the opportunity to comment and give feedback. Again, editing and refining were made, and the survey was published. The link to the survey was shared on IAB Finland's social media channels, website, and newsletters. Also, some paid advertising was utilised on Facebook, Instagram, and LinkedIn.

3.4.4 Structure of the Survey

The survey was divided into four themes, as seen from the survey framework in Appendix 3. It starts with a background information section and then defines the concept of sustainable digital advertising. In the third section, the survey dives into sustainability from the company perspective and, lastly, the state of sustainability within the advertising industry itself.

The survey (see Appendix 3.) utilised different question styles, to utilize the variety of features the different question styles enable like the open questions giving freedom to closed-ended questions limiting the answer options but ensuring comparability, categorical and scaled questions like Likert-type to match and support the aims of the questions properly (Gournelos et al., 2019, p.125). Especially when researching the concept of sustainable digital advertising, an open question was critical to allow the participant to freely describe their opinion. Many standardised questions were accompanied by open additional questions to enable the respondent to freely add any new or unknown knowledge. Also, the order of the questions was carefully planned. The survey was done with a survey platform called SurveyPal. The author used the IAB Finland account to do the survey. This secures the continuity of the survey as the company can duplicate the survey and use it as a framework for the annual sustainability survey. The key concepts such as carbon neutral or carbon footprint, explained and accompanied by appropriate sources of information.

3.4.5 Descriptive data analysis of the survey

Quantitative data can be analysed by utilising descriptive statistical analysis or inferential statistics. While descriptive data analysis aims to describe and summarise the distribution of a quantitative variable or the co-variation of several quantitative variables without generalising based on the results to a broader population, inferential statistics aims to observe the features of the population and evaluate how well the sample represents the population statistically. One variable can be observed through averages, or the standard deviations and multiple variables can be described through correlation coefficients.

(Kvantitatiivisen tutkimuksen verkkokäsikirja, n.d.)

The survey was conducted in April-May 2023 as an online survey. The respondents (n=53) were collected through the IAB newsletter, IAB's social media channels and IAB events. Some IAB Finland Sustainable Digital Advertising Committee members also shared the survey on their personal social media accounts. The average response time was about 12 minutes, which sums up about 10.4 hours of spent time for the entire survey.

There were 429 viewers for the questionnaire, of which 53 fulfilled the survey completely. This makes the response rate to be 12,4%. There was no need to disqualify any responses. The target group was advertising and marketing professionals in Finland, and the idea was to discover the state of sustainability within the advertising industry in Finland. The sample can't be said to represent the whole industry, but it is enough to give an idea of the current state of sustainability within the advertising industry. IAB Finland considers the sample to be a good representation of its member base, covering different sectors of the advertising ecosystem.

The interviews were conducted in September and October 2023. The interviews took place in the Teams conference system. The single interview lasted from 20-45 minutes. It was recorded and transcribed in real time.

3.4.6 Results

3.4.6.1 Demographics

The majority of the respondents, 43,4%, were experts, the second came directors with 24,5% and then managers with 20,8%, the rest were entrepreneurs, 9,4% and other 1,9%. Advertisers (35,8%) and agencies (35,8%) were evenly represented, while publishers only represented 13,2% in the survey. Ad Tech representatives accounted for only 7,5% of respondents, as seen in Table 2. There were no industry association representatives; thus, including them in the interview was considered important.

Table 2. Roles of the respondents

The roles of the respondents	%	Number of respondents
Advertiser / brand	35,8%	19
Agency (e.g., advertising, media, or digital agency)	35,8%	19
Publisher	13,2%	7
Ad tech company	7,5%	4
Industry organization	0,0%	0
Something else	7,5%	4
Total	100%	53

IAB Europe survey assessed the sizes of the companies through the number of employees, and this survey followed that path. As can be seen in Table 3 below, almost half of the companies represented by the respondents were small enterprises with fewer than 100 employees, but on the other hand, a total of 17% represented larger enterprises with more than 5,000 employees. A fifth (20,7%) of the enterprises had 101 to 1000 employees, and the remaining 15,1% of enterprises had 1000 to 5000 employees. The respondents had a good level of knowledge in sustainability – as many as 68% of the respondents work partly or a lot with sustainability. Almost half, 47,2%, of the companies, operate only in Finland; the rest operate also in the Nordics or internationally.

Table 3. Number of employees in the company

Number of employees in the company	%	Number of respondents
1-100	47,2%	25
101-500	9,4%	5
501-1000	11,3%	6
1000-5000	15,1%	8
5,001-10,000	5,7%	3
10,000 +	11,3%	6
Total	100,0%	53

3.4.6.2 The concept of sustainable digital advertising

In order to gain insights into the perception of sustainable digital advertising, there was an open question (Q6) encouraging the respondents to describe their idea of the concept of "sustainable digital advertising". The responses to this question were analysed using qualitative analysis.

The analysis of qualitative data is about finding patterns. It is done by constructing categories as well as one can with the available knowledge. Categorising is about forking through a vast amount of data and matching similar matters under one category. Coding is finding a descriptive word or a phrase for a piece of data before categorising it further. This style of work is strongly dependent on the viewpoint of the researcher. Thus, different research can

find different codes and different categories. After coding, the codes are arranged in clusters. (Saldana, 2011, pp. 92, 96, 97)

Qualitative research is an evolutionary process, and the post-fieldwork period with continuing reflection and systemic data analysis, even possibly resulting in additional data collection, can be considered an analytic operation (Saldana, 2011, p.90). During the post-fieldwork of the survey, the author wanted to re-analyse the categories derived in May 2023. Most categories were kept the same during the second analysis period in September 2023, but there were some changes.

The author first drew the raw data from the Q6: "What do you think the term sustainable digital advertising means?". All the 53 respondents had answered the questions, some briefly, some with more sentences. On average, the length of the answers was short, so no summarising was needed; answers were straight-coded. After the coding, seven categories were derived: Three pillars of sustainability, partnerships and supply chain, ethical advertising, regulations and rules, sustainable products and services, carbon footprint and impact, as shown in Figure 7 below.

Figure 7. Q6: Seven categories of sustainable digital advertising by the author



Within the category box are the most frequent and relevant codes. The categories mentioned in the order where the most codes were found reference the three pillars of sustainability as the most common one.

This category represents the umbrella under which sustainable digital advertising can be understood. The respondent's ability to link and apply the three pillars of sustainability to digital advertising also refers to the respondents' high level of sustainability knowledge. It can also reflect the acknowledgement of IAB Europe's (2023b) definition of sustainable digital advertising that seemingly chose to take the three pillars of sustainability as a framework for the concept.

Working with sustainable partners and considering sustainability throughout the supply chain was considered part of sustainable digital advertising. It was also acknowledged that these decisions can only be made to a certain extent. However, it still should be considered: "Sustainable digital advertising is strongly connected to the advertising environment. Is the media, where advertising takes place, sustainable? Do all the other partners and operators you work with have sustainable activities?"

The ethical advertising category describes the attempt to do advertising that does not only meet the legal requirements and follows the rules of good manner but goes beyond that, is truthful, transparent and creates trust. As one respondent described: "Genuinely honest advertising, that does not mislead the consumer with greenwashing (case Finnair). At the same time, advertising should not give a false image from, e.g., company's operations".

Regulations and rules were never mentioned as the only feature of sustainable digital advertising but as a part of it: "[Sustainable digital advertising] is advertising done responsibly, complying to law and good manners. Also considering social responsibility".

Considering the sustainability of advertised products or services seems to divide respondents. Some answers considered only the production and distribution of the advertising. However, on the other hand, responses also stated that advertising could be only sustainable if the content itself is: "Digital advertising can only be sustainable if the product or service it advertises is sustainable. For example, an ad advertising a weekend trip to New York cannot be responsible, as this type of travel should be reduced".

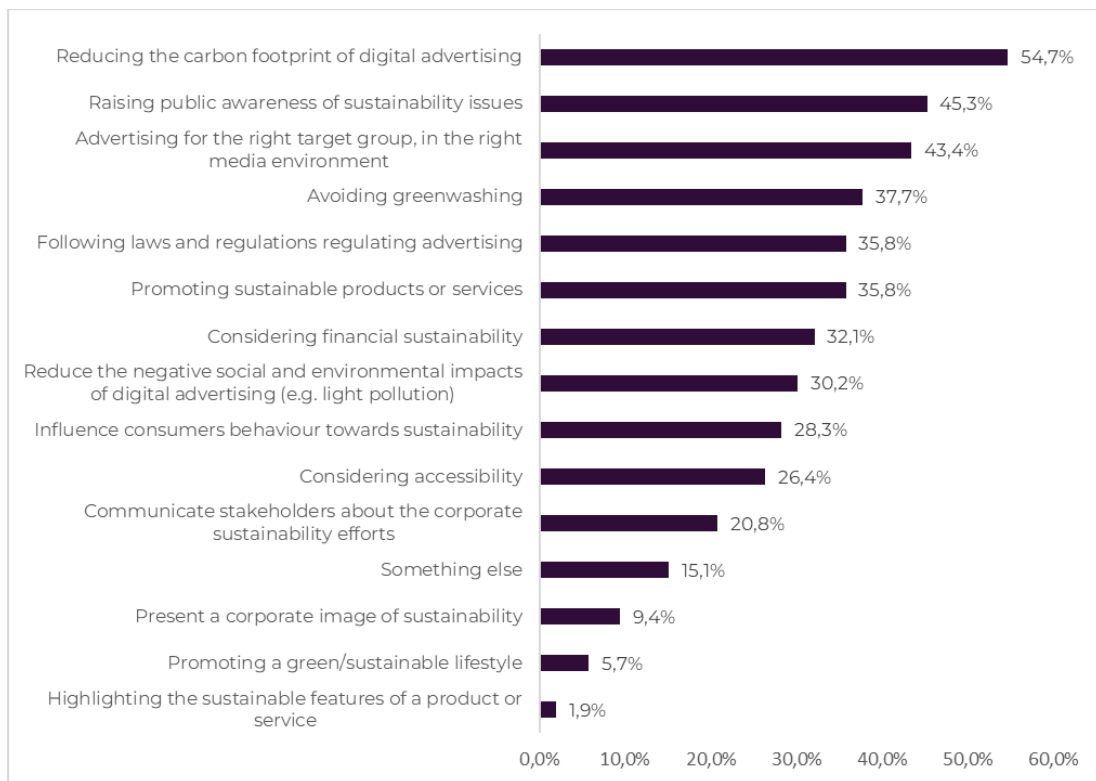
Considering and reducing carbon footprint was often referred to alone as a defining feature of sustainable digital advertising: "Sustainable digital advertising is about considering, e.g.,

the carbon footprint from the brief to the execution (of the advertisement)". There is a lot of discussion within the industry around the carbon footprint of advertising; thus, it is on top of mind regarding the sustainability of digital advertising.

The final category is called impact, and it describes the attempt to create a positive impact in terms of sustainability using advertising as a tool, whether it is advancing sustainable consumption or development. A similar feature was found in the literature review of green advertising, see Table 1. This category was not common, with only a few matching codes, and these features could be part of ethical advertising. However, the message behind the features contains not just limitations but possibilities: "Sustainable digital advertising takes into account the ethical aspects of advertising (to whom and what is advertised), how the advertising was produced, on which channel it is advertised, and the consumption of energy and natural resources caused by the advertisement. Sustainable digital advertising aims to minimise the negative effects of the points mentioned above or even have a positive impact".

Q7, represented in figure 8, asked the respondents to define the concept of sustainable digital advertising further by choosing the most relevant concept. Compared with Table 1, we can see that the features of green advertising derived from the academic literature are not the most popular or common features related to sustainable advertising. Only raising public awareness of sustainability and promoting sustainable products and services are in the top five features. The rest of the features are mostly present at the bottom of the chart, getting the lowest number of votes, like highlighting the sustainability features of products and services, promoting a green/sustainable lifestyle, and presenting a corporate image of sustainability. Seemingly, the concept of green advertising does not correspond to the perception of sustainable digital advertising today among advertising professionals. In the open-answer part of the question, the role of partnerships and the media environment was mentioned.

Figure 8. Q7: Features describing sustainable advertising



3.4.6.3 Sustainable digital advertising

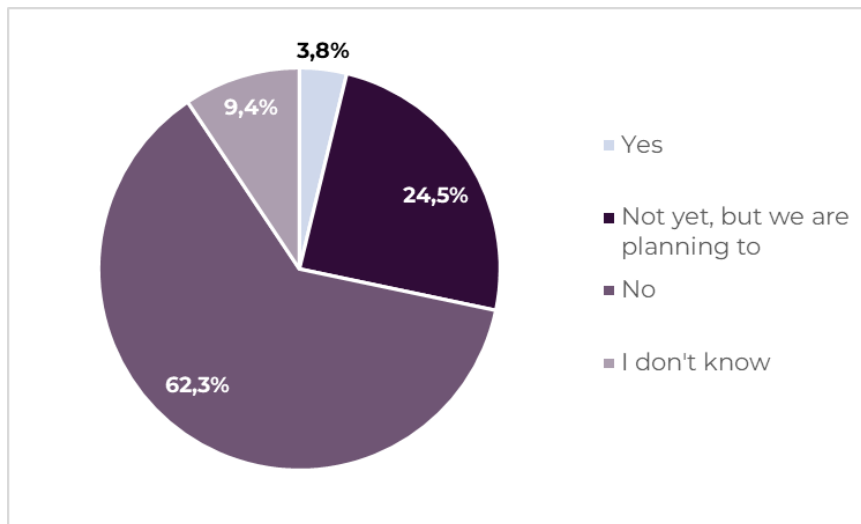
In Q8, the respondents were asked to rate the sustainability within their current digital advertising between 0=not sustainable at all and 10=very sustainable, and the average of the responses was 6,94.

When asked about measuring the sustainability of digital advertising in Q9, only 3,8% of respondents stated to measure the sustainability of digital advertising in general, but as many as 34% of all respondents were planning to start measuring it. 52,8% of respondents did not measure, and the rest, 9,4%, did not know whether it was measured. When asked about the methods of measuring the sustainability, majority of responses referred to measuring the carbon footprint. Some answers also described that there are no ready methods but sustainability roadmaps and frameworks underway for digital advertising.

The next question, Q10, represented in figure 9, about measuring the carbon footprint of digital advertising, revealed that the current measurement of sustainability is, in fact, if not just but mainly measuring the carbon footprint of advertising, having the same participants of 3,8% answering yes. As represented in Figure 9 below, 24,5% of respondents were planning

it, while 62,3% concluded not to be measuring the carbon footprint of digital advertising. The rest did not know. In the IAB Europe (2023a, p.13) State of Readiness survey, 20% of respondents already measured the carbon footprint of the delivery of ads, while 51% were not measuring it. The ones who were measuring the carbon footprint did it through a third-party operator calculator and model. Some were planning to build their own methods.

Figure 9. Q10: Measuring the carbon footprint of digital advertising



In Q11, carbon-neutral digital advertising was defined as digital advertising in which the carbon footprint is first minimised and the residue compensated. None of the respondents made carbon-neutral advertising, but 7,5% were planning to, and the most common target year was 2030 with three respondents and 2035 with one respondent. Almost a third of respondents (32,1%) were considering it, while 15,1% stated it would not be possible. Only 3,8% stated it not to be important, while the great majority, 41,5%, did not know the situation in their company. When asked about the ways to do carbon-neutral advertising in an open question, one respondent said that the company will have their own compensation system that utilises third-party partners and other already existing partners. One respondent stated the whole organisation should be carbon neutral by 2035, but it is likely that digital marketing has not been considered in the scope.

3.4.6.4 Sustainability within the company

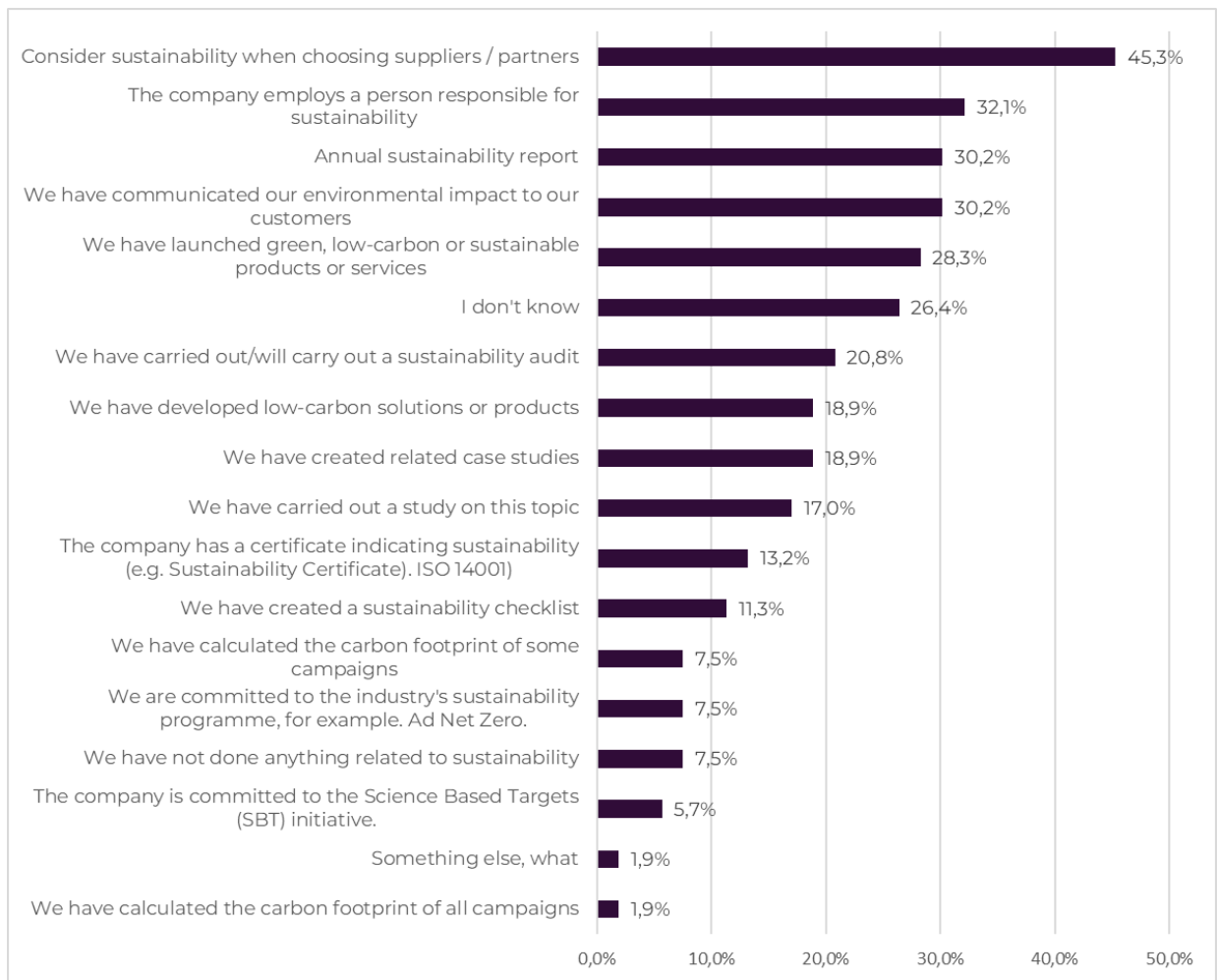
The majority (67,9%) of the respondents' companies have a sustainability-related strategy or program, almost a quarter of respondents (22,6%) had nothing, and the rest 9,4% did not know whether or not the company has a sustainability program. Measuring the carbon

footprint company-wide was more common, with 37,7%, with almost a fifth (18,9%) of the respondents planning to start measuring the carbon footprint. Almost a third, 30,2%, still do not measure it, and 13,2% did not know. When asked for more information on how the carbon footprint is measured, the responses varied a lot from referring to GHG protocol, EcoVadis reporting to a more general level as "carbon footprint calculator" or explaining what all is considered "...measuring the usage of the renewable energy, transportation, purchase".

A few companies already stated themselves to be carbon neutral, with 5,7% of respondents. More than a quarter of respondents (26,4%) will be carbon neutral in the future. The target years varied from 2025 to 2050, with 2025 and 2030 being the most common, with an equal number of responses.

Q15, also presented in Figure 10 below, asked the respondents to choose the actions their company had so far done within sustainability. The most common actions were considering sustainability when choosing partners (45,3%), having an employee responsible for sustainability (32,1%), making an annual sustainability report (30,2%) and communicating the environmental impact to the customers (30,2%) as can be seen in figure 10 below.

Figure 10: Q15 What has the company done so far with sustainability?



The most common actions in the IAB Europe (2023a, p.12) study were different, with the most common making a sustainability audit (50%), having a dedicated sustainability lead (46%) coming second, and thirdly creating a checklist with 46%.

Green, low-carbon or sustainable products were offered by 28,3% of respondents, with IAB Europe(2023a, p.12) being slightly more common with 33%. When asked what kind of products or services the company offers, many solutions were related to carbon footprint or carbon neutrality. "We compensate the carbon footprint that comes from the production of the product. We utilise the waste heat that comes from producing the services". Also, circular economy, reduction of chemicals in products, having sustainable companies as customers and domestic production were mentioned.

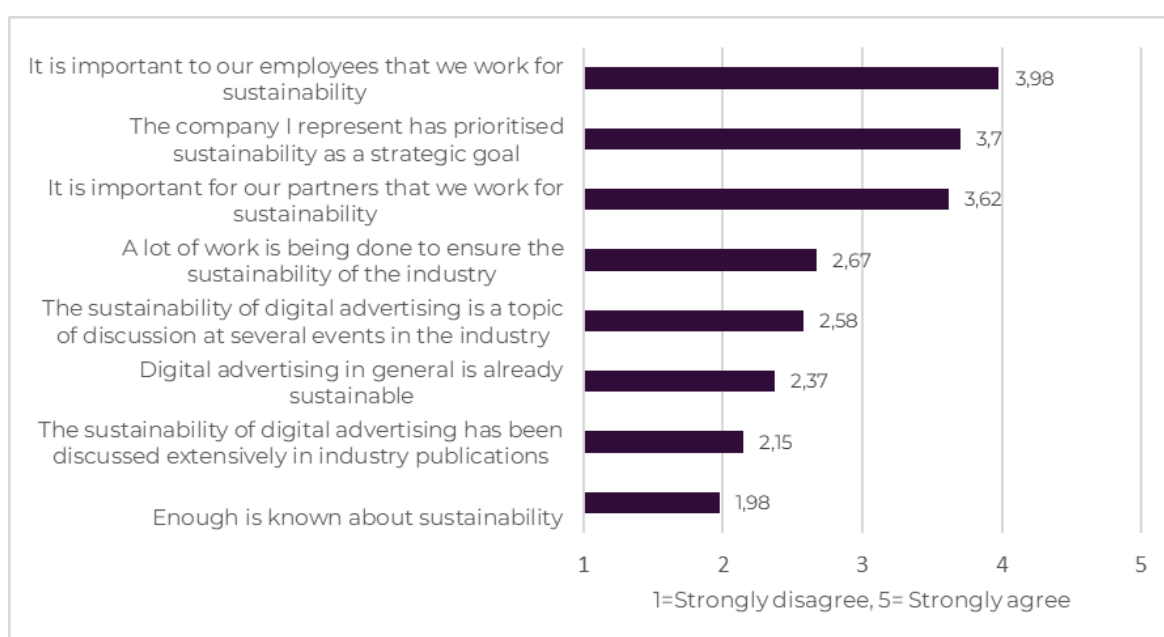
Only 7,5% of respondents had signed up for an industry initiative such as Ad Net Zero, while in the IAB Europe(2023a, p.12) survey, 30% had done it, representing a significant difference.

The initiatives mentioned in the open follow-up question were Ad Net Zero, and one company was actively participating in multiple sustainability initiatives like SBT (initiative) and Global Compact. Only 13,2% had some sustainability certification; the most common certifications were ISO certificates or EcoVadis. CDP, DJSI and Corporate Knights' Global 100 Index were also mentioned.

3.4.6.5 Sustainability within the industry

As seen in Figure 11, the responses in Q16 show that working for sustainability was considered especially important for the employees (66,1% strongly agree or agree) and the partners (54,7% strongly agree or agree). In the IAB Europe (2023a, p.14) study, 75% strongly agreed or agreed that considering sustainability is important for the employees and 71% strongly agreed or agreed that it is also important for the partners. In this survey, 54,7% strongly agree or agree that sustainability is a strategic goal for their company; similarly, 53% of respondents in IAB Europe (2023a, p.14). On the other hand, it was concluded that, in general, there is not enough knowledge about sustainability, and it could be talked about more in industry publications (see Figure 11).

Figure 11. Q16: Importance of sustainability within the industry



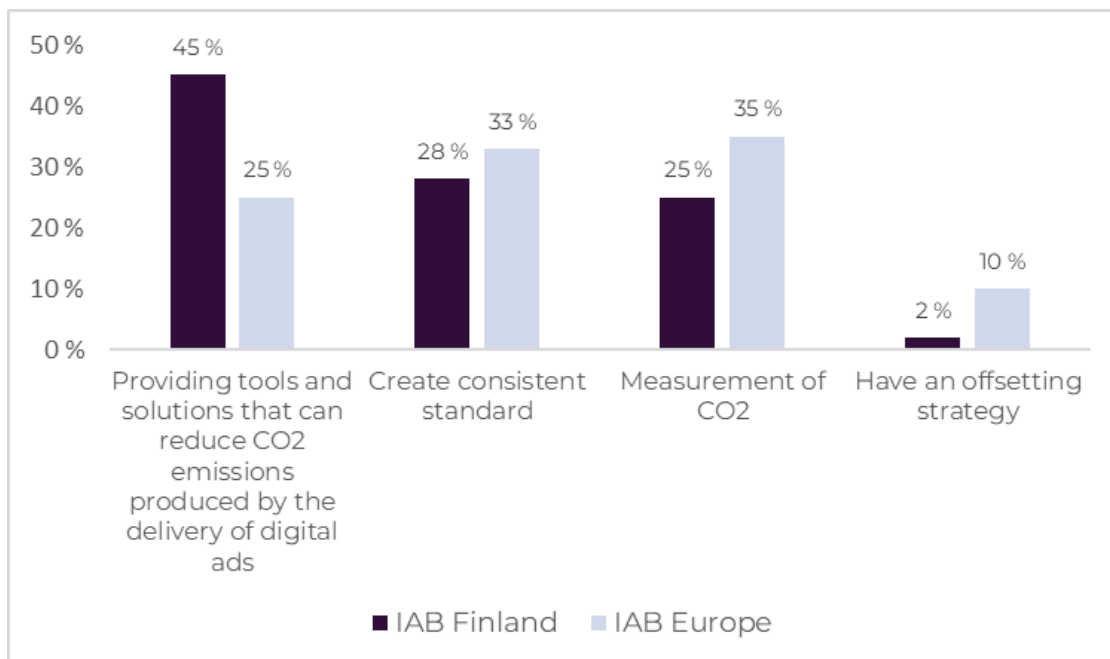
As many as 67,9% of respondents strongly disagreed or disagreed that enough is known about sustainability. 54,7% of respondents strongly disagreed or disagreed that the sustainability of digital advertising has been extensively discussed in industry publications, while in IAB Europe (2023a, p.15), the survey responding percentage was 43%. Digital advertising is generally not considered sustainable, with 45,3% strongly disagreeing or disagreeing with the statement.

The most significant challenge on the way to sustainable digital advertising was considered to be the lack of industry standards (39,6%) and, right after it, the lack of awareness and education (35,8%). IAB Europe (2023a) survey found similar results, but the other way around, stating that the most common challenge was the lack of education (33%), and the second was the lack of industry standards(30%).

The respondents were unified when asked whether there is enough knowledge and training available about sustainability within the industry, with 84,9% answering no and the rest stating that they do not know. None of the respondents answered yes. More than half (52,8%) agreed that the industry should have a third-party operator to audit the CO2 emission measurement and standards, while 18,9% did not think it was necessary.

Q19 discovered that the most important way to reduce the carbon footprint of digital advertising was considered to be providing tools and solutions that can reduce the CO2 emissions of digital advertising, with 45% of respondents voting it as the most important thing to do, as can be seen in figure 12. The second most important thing was creating consistent standards with 28%, and the third, with 25% of respondents, was measuring the carbon footprint of digital advertising. Only 2% thought creating CO2 compensation or offsetting strategy was the most important thing. These results differ from the IAB Europe (2023a) survey, with the measurement of CO2 coming as the most important thing with 35% of respondents. The second was creating consistent standards with 33%, and the third was the provision of tools and solutions. Also, there the offsetting strategy was not considered the most important factor. (IAB Europe 2023a) In the open responses, the lack of knowledge and awareness about the carbon footprint and sustainability in digital advertising in general was mentioned as one challenge to tackle. Also, the responsibility of advertisers was mentioned as having servers running with renewable energy.

Figure 12. Q19: How to reduce carbon footprint of digital advertising adapted from IAB Europe (2023a) by the author



3.5 Qualitative method

3.5.1 Semi-structured interviews

In order to gain a more profound and reliable understanding of the concept and current state of sustainable digital advertising, there were five expert interviews conducted in September and October 2023. The interview protocol (in Appendix 4) was created by the model provided by Hirsjärvi and Hurme (2022, 5.1. Tutkimussuunnitelman välttämättömyys, tutkimussuunnitelman osat).

The survey and its results were used to create the structure for the semi-structured interview. The semi-structured interview has no clear definition, but it is somewhere between structured and survey interviews (Hirsjärvi & Hurme, 2022, 4.2.3 Teemahaastattelu – puolistrukturoitu haastattelu, paragraph 1). A semi-structured interview is usually based on a predefined stem to which the participant may respond freely. Additional questions can be asked based on participants' responses. This method is good for cases where the researcher already has a good knowledge base and knows about the theme but does not know all the answers to the questions. (Gubrium et al., 2012, p.197) The interviews followed the idea of a theme interview (in Finnish: teemahaastattelu) developed by Hirsjärvi and Hurme. It is a semi-

structured method as the interviewees' themes are the same, even though the order of the questions and the specific form might vary. The focus is on the themes rather than specific questions; thus, the researcher gives space for the interviewees and their perceptions about the issues. (Hirsjärvi & Hurme, 2022, 4.2.3 Teemahaastattelu - puolistrukturoitu haastattelu: Miten teemahaastattelu eroaa muista haastatteluista?, paragraph 3,4) The themes of the interview can be seen in Appendix 5. The content for the interview was inspired and informed by the survey done earlier and the themes that arose from the responses.

3.5.2 Conducting interviews

Hyvärinen et al. (2017) state that the most essential matters in managing the interview data are informing the participants, handling their privacy, the participants' consent and the data's description. At least the interviewees should be informed about the contact details of the researcher, the topic and the objective, how and where the interview is conducted and whether it is recorded. For example, the participants should also be informed about confidentiality and how the data is used and archived. (Hyvärinen et al., 2017) The participants were informed about the abovementioned matters in the invitation email (Appendix 6) and then again at the beginning of the interview. Anonymisation can be handled by deleting, categorising, and changing identifiable data to something else (Hyvärinen et al., 2017). All of these methods were utilised to secure the interviewees' confidentiality and privacy.

The participants were invited to the interview with a formal email (in Appendix 6) and by a more informal message. The themes of the interview were sent to participants beforehand. The interview was voluntary, and answering the questions was voluntary as well. The participants were informed about the anonymity and privacy matters and were asked for permission to record the interview. The interviews were conducted in Teams, and they took from 20-45 minutes. The author adjusted the questions according to the interviewee and presented additional questions if necessary.

3.5.3 Sampling for the interview

Qualitative research previously tried to follow quantitative research by trying to determine a standardised numerical requirement for the selection of participants. However, the research could not agree on the optimal sample size, varying from 5 to 25 participants, according to various academics. The sample size is now understood to be fluid and vary through the

research design and process. Theoretical saturation is a common determinant and guideline for sample size, but it is not a flawless strategy either, as there is no common definition for when saturation is achieved. (Gubrium et al., 2012, pp.243-244) Other than the saturation of knowledge, recently, academics have tried to add as many perspectives to answer the questions as possible, so rather than increasing the number of participants, increase the number of roles and perspectives the participants have. (Gubrium et al., 2012, pp.248-249) Purposive sample is purposeful for a qualitative study as the aim is to understand something in-depth rather than have statistically generalised data. However, the purposive sample can be deceptive and it can never be certain whether or not it is representative enough. However, the researcher can testify that there is no systematic delusion involved in the selection process. (Hirsjärvi & Hurme, 2022, 5.2. Kohdejoukko ja haastateltavien valinta, paragraph 5, 10)

For the interviews, the author asked for experienced digital advertising professionals who follow and have a good knowledge of the sustainability issues and efforts the whole advertising industry is facing. Additionally, it was necessary to gain insights and perspectives from different fields of advertising; therefore, rather than reaching multiple professionals, the author wanted to get a variety of perspectives and therefore interviewed a representative of an advertiser, agency, ad tech company, publisher, and industry association. The author discussed the aforementioned criteria with an IAB Finland representative and was guided forward towards appropriate experts. Altogether, there were five interviews.

The backgrounds of the interviewees can be seen in table 4 below. The interviewees were all experienced professionals who had from 7-20+ years of experience in digital advertising. The work fields of the interviewees varied from business development to account management. All of them had some active take on sustainability, if not officially through work, then through personal interest that has reflected to work life as well through participation in sustainability related internal or external committees for example.

Table 4. The backgrounds of the interviewees

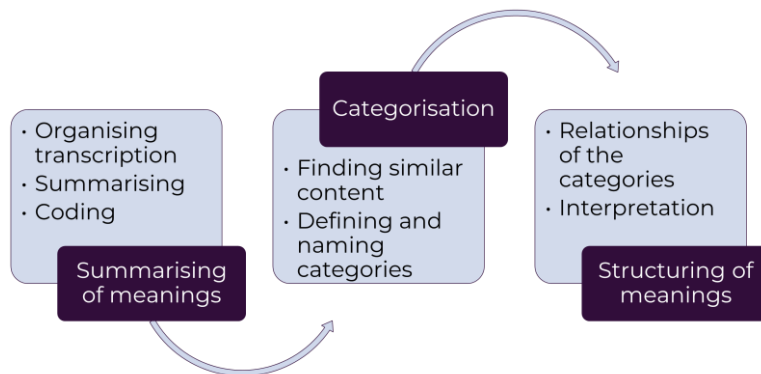
Respondents	Field of the company	Job designation	Experience in years	Interest in sustainability
Respondent 1	Ad Tech	Account management	12	Partly work related

Respondent 2	Advertiser	Marketing	7	Partly work related
Respondent 3	Agency	Account management	20+	Partly work related, strong personal interest
Respondent 4	Industry Association	Business development	10+	Strongly work related
Respondent 5	Publisher	Business development	18	Work related, personal interest

3.5.4 Content analysis

Qualitative analysis has no standardised process, but there are three stages that can be identified: the summarising of meanings, categorisation, and structuring of meanings (Saunders et al., 2009, pp.490-491). The three stages are described in figure 13 below, accompanied by action steps the author has taken in the specific stage. For semi-structured interviews, content analysis is the most suitable analysis method (Gubrium et al., 2012, p.198). However, the interviews aimed to observe the different operators within the advertising market and their viewpoints on the concept. Therefore, the different roles are also anchored to the answers rather than focusing on the mere content of the answers and their meanings.

Figure 13. Qualitative analysis process adapted from the theory by Saunders et al. (2009, pp.490-491) by the author



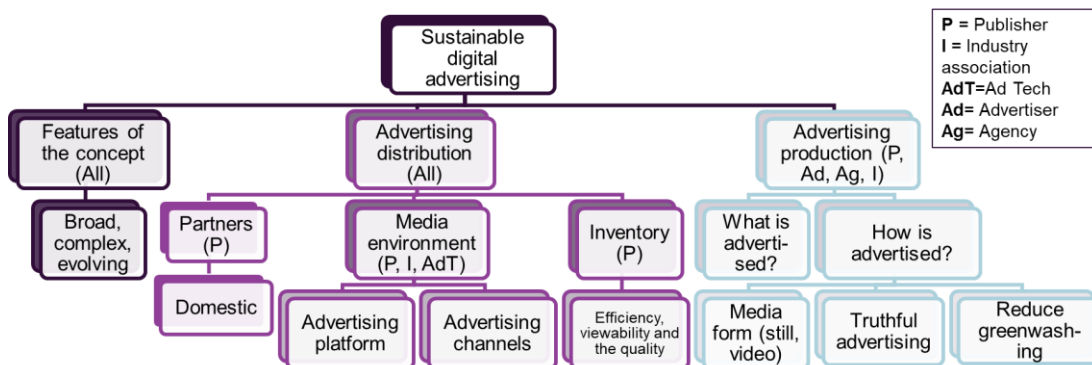
In the content analysis first, the researcher identifies pieces of text with similar content, separates them from the interview and creates a category for them by adding all the similar text underneath it. After completing this step, the characteristics of the category are analysed, and common characteristics are identified. The labelled category is defined and the relationship in between different categories is identified. (Gubrium et al., 2012, pp.198-199) Many of the questions generated unanimous and repetitive answers thus categorisation was made mainly for the topics where it was seen to bring value and meaning. The themes the interviewees were asked can be seen in appendix 5.

3.5.5 Results

3.5.5.1 Sustainable digital advertising

There were three categories that could be derived from the answers concerning what sustainable digital advertising is: 1) the features of the concept, 2) advertising distribution and 3) advertising production. The categories are described in the figure X below.

Figure 14. Categories for Sustainable Digital Advertising derived from the interview results by the author



The interviewees, in unison, described the concept as broad, complex, and evolving. It was said that the understanding of the concept and matter had massively evolved during the past year, "If you had asked me this question a year ago, I would have answered you something very different," said the advertiser representative.

Mostly, sustainable digital advertising was linked to the distribution of digital advertising. Every single interviewee referred to the distribution of advertising in one way or another. The agency representative referred to the IAB definition of sustainable digital advertising as a suitable reference point. IAB Europe's (2023b) definition applied three pillars of sustainability to digital advertising but only considers the distribution of advertising. Publisher, industry association and ad tech representatives emphasised the media environment and the importance of considering where the advertising is bought but also where the advertising is seen. The publisher concluded that one must consider matters like efficiency, viewability and the quality of the inventory. Considering sustainability when choosing partners was mentioned in general by the publisher representative and referred to in choosing media partners by the ad tech and industry association representatives. Favouring domestic media was seen as a more sustainable solution than supporting digital giants like Google. Carbon footprint was also mentioned, but slightly surprisingly, it did not play a main role in any of the answers.

Advertising production was referred to by the publisher, advertiser, and agency representatives. The industry association mentioned, "The concept is wider though; it can also consider what is advertised, and in what form of media". The agency representative was

pleased that now that there are more sustainable products and services, the advertising itself is considered. Advertiser mentioned themes like reducing greenwashing and honesty in advertising, referring to ethical advertising.

3.5.5.2 Carbon footprint

The importance of carbon footprint in the discussion of sustainable digital advertising was contradictory. On the other hand, it was considered to be a centric concept, but at the same time, it was considered to be ambiguous, not impactful, and rarely measured.

Industry association representative estimated that, in reality, very few measure the carbon emissions from their advertising, and if they do, it is only campaign-based. Ad tech representative concluded that the carbon footprint had received a significant role in the current discussion, probably due to the recent invasion of the Finnish market by the companies and solutions that address the challenge. The publisher representative was not worried about the lack of measurement capability as such but emphasised that actions must be taken to reduce carbon footprint despite having the exact figures: "You should start improving things, even when you don't know the details".

3.5.5.3 Challenges

All the interviewees referred to the lack of standards and framework at some point in discussions when it comes to the challenges of sustainable digital advertising.

The publisher thought there were some resource issues within the organisations that prevented developing the sustainable practices further but also mentioned the current dependence on third-party operators, especially when talking about the carbon footprint, was also seen as a challenge.

Industry association representative thought the current operating model of programmatic advertising troublesome and also considered some of the current trends within digital advertising to be challenging for sustainability, such as the increase in video usage. Also, the end of third-party cookies takes a lot of attention, and this attention is away from developing more sustainable digital advertising. Ad tech representative additionally mentioned capitalism and the need to make a profit in general as a challenge.

3.5.5.4 Solutions

Solutions could be divided into three categories: 1) general solutions, 2) advertising solutions, and 3) partner-based solutions.

The category of general solutions includes suggestions like the usage of renewable energy company-wide, using the hopefully upcoming standards and raising awareness of sustainable digital advertising. Ad tech considered the usage of renewable energy important but also questioned the need for using the currently limited resource of renewable energy for advertising instead of other more important issues. Agency and ad tech preventatives also highlighted the importance of awareness about the issue. The anticipated solution for the industry is the standards and a framework for sustainable digital advertising, which were mentioned by the majority of interviewees.

The advertising solutions category constitutes suggestions like reduction of programmatic advertising, buying inventory straight from the media, using still instead of video format, reducing data waste within ad inventory, and focusing on contextual data. The industry association representative contributed to the suggestions, but the publisher representative had similar thoughts. Ad tech concluded that the same measures that would make advertising more sustainable would make it more consumer-friendly as well.

Partner-based solutions consist of focusing on domestic Finnish media in advertising instead of global giants and collaborating with or buying relevant solutions from other companies. Favouring Finnish media was seen as a sustainable solution by the publisher, ad tech, advertiser, and industry association. The agency thought that from their perspective, the initiative for sustainability should come from the advertiser side.

3.5.5.5 Different roles

When asked about what their role in sustainable digital advertising is, everybody mentioned choosing sustainable and responsible partners. Interestingly enough, when asked how this actually shows, nobody had any concrete criteria or guidelines. The sustainability of the partner is not defined, and neither is it a part of clear decision-making criteria. So even when sustainability and responsibility were discussed when choosing partners, it seems actually not to be currently an important definitive or decisive criterion. This is reflected in the IAB Finland survey result of 44,2% of respondents stating that the most common act of

sustainability is considering sustainability in partnerships, which raises a question of what it concretely means.

Agency representative considered their role limited to giving directions and guidance to their clients. They emphasised, for example, inclusivity in their work. At the moment, choosing customers based on sustainability-related factors was seen as impossible. The agency thought that publisher and ad tech companies could have a bigger role in advancing sustainability within advertising.

Ad tech representative said that, for example, their company has invested in using renewable energy in their operations and also referred to offering customers solutions that can reduce the environmental impact.

Publisher representative emphasised the need to have a good and efficient advertising inventory to offer, but also making sure the inventory is on sale in the right places, considering the SSPs, so in general, being as efficient as possible in terms of using data.

Advertisers concluded that even though their company has a separate sustainability department and emphasises sustainable production, the sustainability efforts are not really stretched to the advertising or marketing itself. So, there is a gap between marketing and sustainability. The representative also concluded that a framework and one-pager of sustainable marketing or advertising would unify the department. Advertisers also mentioned considering the media providers carefully and focusing on domestic media instead of global giants whenever possible.

Industry association aims to bring all the different parties to the same table and facilitate the discussion around the topic. Industry associations could also help provide unbiased standards for the industry in a way that considers all the relevant operators. In a way, industry association is left to fill in the gap that the lack of legislation and its slow development leaves in the industry that wants to move forward.

3.5.5.6 The state of digital advertising

The majority of interviewees stated that Finland is in the very beginning of sustainable digital advertising. Only the advertiser representative considered the state of sustainable digital advertising to be rather good in Finland; for example, the legal requirements considering alcoholic beverages and advertising for minors are well followed. The representative also

considered the seemingly simple Finnish media market with only a few big, quality media, encouraging making sustainable decisions.

Ad tech representative that the market had come a long way within a year when previously sustainability was clearly not a factor in the discussions with advertisers. Ad tech also stated that there is still an apparent lack of knowledge about the topic within the advertisers.

The publisher representative acknowledged that there are some steps taken forward, but the main focus seems to be on the carbon footprint. There should be more attention to other issues, for example, diversity and inclusion within advertising. The representative also noted that there are constantly emerging companies with a sustainability focus within the industry.

Industry association representative consider the state of Finland in sustainable digital advertising better than the state of Sweden due to the lower share of programmatic advertising Finland has.

3.5.5.7 Regulations in advertising

Regulations and their impact divided the interviewees. Agency representative did not think the regulations were followed that closely, and legislation was considered too slow. Industry representative argued that the regulations are well followed if they are clear enough, so if some regulations are not followed, it is mostly due to misunderstanding. Advertiser considered Finland rather cautious on a global level. For example, Finnish consumers are well aware of their rights and eager to notify influencers of a lack of compliance with the regulation of sponsored content and its need to be marked properly. Publisher considered that following the regulations depends on the regulation and how well it serves the market. This is due to the legislation not always considering the market and its needs as well as it would be wished.

4 Conclusion

This master thesis aimed to describe the state of sustainability within the digital advertising industry in Finland and also shed light on the concept of sustainable digital advertising and the situation of measuring carbon emissions within the Finnish advertising field.

The results of the online questionnaire and the interviews support each other and confirm that we are beginning the journey to sustainability within the digital advertising industry. Knowledge, awareness, and solutions are developing fast. During the year this research has taken place, there has been a lot of positive development and interest towards sustainability within the Finnish advertising industry.

At the beginning of the research for this thesis, there was no definition for sustainable digital advertising, not in English or in Finnish, neither within the industry nor in the academic literature. We have gone from not having one clear definition to having a European industry association-level agreed definition accompanied by a Finnish version. The advertising industry has also witnessed sustainable advertising solutions entering the Finnish market.

4.1 The state of sustainability within digital advertising industry in Finland

On the company level, the level and understanding of sustainability seems to be a bit more advanced. However, the awareness and activities have not yet spread or applied to the marketing or advertising department of the company within the most active companies either. The open-text answers and an interview mentioned that the company has a sustainability department and/or a sustainability strategy. However, in reality, the respondent/interviewee wasn't sure what was done for sustainability in the company. The majority (67,9%) of the respondents' companies have a sustainability-related strategy or program, and measuring the carbon footprint company-wide was more common, with 37,7%, with almost a fifth (18,9%) of the respondents planning to start measuring the carbon footprint.

The most common actions to advance sustainability were considering sustainability when choosing partners (45,3%), having an employee responsible for sustainability (32,1%), making an annual sustainability report (30,2%) and communicating the environmental impact

to the customers (30,2%). However, during the interviews, the answers were vague when asked about how the consideration of sustainability was fulfilled when choosing partners. It turned out that, in reality, there was no criteria or selection process to ensure the sustainability of the partners. It was stated to be a matter of discussion. In general, working with domestic partners was considered sustainable.

At the industry level, working for sustainability was considered especially important for the employees (66,1% strongly agree or agree) and partners (54,7% strongly agree or agree). On the other hand, it was also concluded that there is not enough knowledge about sustainability, which could be discussed more in industry publications. The most significant challenge on the way to sustainable digital advertising was considered to be the lack of industry standards (39,6%) and, right after it, the lack of awareness and education (35,8%). Almost all concluded (84,9%) that there is insufficient knowledge and training available about sustainability within the industry.

There seems to be a lot of intent and genuine interest in making more sustainable advertising. Finland is a small market with few big media compared to the European scale. Thus, there might be a lower need for programmatic advertising, which could simplify the digital supply chain and make committing to sustainable digital advertising easier than in many other countries. Comparing the IAB Europe (2023a) survey results reveals that we are in similar positions to Europe. The biggest difference comes from measuring the carbon footprint of digital advertising. The results showed that only 3,8% measured the carbon footprint of advertising 24,5% of respondents were planning to do it while 62,3% concluded not to be measuring the carbon footprint of digital advertising. In the IAB Europe (2023a) state of readiness survey, 20% of respondents had already measured the carbon footprint of the delivery of ads, while 51% had not.

4.2 The concept of sustainable digital advertising

Sustainable digital advertising is a broad, complex, and evolving concept. The features of green advertising did not seem to match the current concept of sustainable digital advertising, as we can see in Chapter 4.1.2. The publication of IAB Europe (2023b) and IAB Finland (2023b) definitions made the discussion more tangible. However, comparing them to the survey results and academic framework revealed a gap regarding the sustainability of the product or service as an object of advertising. The IAB definitions only consider the distribution of advertising, while the production and other activities are excluded. Even though the social sustainability section does mention that "... organisations consider the

impact of their actions, products, and services on the wider society and not just on customers and suppliers" (IAB Europe, 2023b), the definition does not condemn for example, advertising for fossil fuel heavy industries or other activities that could harm people or planet.

On the other hand, the online questionnaire results revealed that the sustainability of the product and service is considered among respondents as part of sustainable digital advertising. This topic also surged within interviews, where the agency and advertiser representatives mentioned it. The distinction could be made between the stakeholders and their roles in different advertising phases.

Considering the sustainability of products and services by agencies and advertisers is logical as they are often directly engaged with these features, and advertisers can significantly influence this matter. On the other hand, ad tech companies, publishers, and industry associations typically have little influence over the production or development stages of products and services, making them unable to impact the sustainability of these phases.

There were also similarities between the IAB Europe (2023b) definition and the results of this research. The same elements the survey and interviews revealed can be found in the IAB definitions. The concept of sustainable digital advertising was considered to include themes like the application of three pillars of sustainability, partnership and supply chain, ethical advertising, complying with regulations and rules, sustainable products and services, carbon footprint and impact.

In general, the IAB definition (IAB Europe, 2023b) seems to effectively describe the advertising industry's comprehension of sustainable digital advertising. Nevertheless, the practical application of these definitions across various operators results in diverse interpretations and outcomes.

4.3 The carbon footprint of digital advertising

The carbon footprint of digital advertising is still a new and ambiguous theme. Only 3,8% of respondents were measuring the carbon footprint of digital advertising, but as many as 24,5% of respondents were considering measuring it in future. In the IAB Europe (2023a, p.13) survey, 20% of respondents already measured the carbon emissions of the delivery of the ads. Good-Loop survey found that 61% of U.S. and 71% of U.K. marketers already track the carbon emissions generated by their digital advertising campaigns (Good-Loop, 2022b, p.3; Good-Loop, 2022c, p.3). There seem to be multiple ways to measure it, and no

common, clear standards are available. The carbon footprint of digital advertising was considered a centric topic, but it was also considered to take much attention on other sustainability-related matters. As it is vital to consider the emissions advertising creates and continue developing understanding and awareness around the topic and supportive tools and methods to reduce those emissions, it is also good to recognise that the carbon footprint is not the only sustainability-related issue within advertising.

5 Discussion and recommendations

The willingness and eagerness of the advertising industry to focus so intensively on how it is advertised rather than what is advertised is thought-provoking but also understandable. The carbon footprint is a measurable, tangible, and impactful factor that makes the impact visible; therefore, it makes sense that it is something the advertising industry grasps. There is a limited impact on the advertising ecosystem, what is advertised. The supply side of advertising is dependent on the demand from advertisers and agencies.

Reliability considers whether the data collection techniques or analysis would lead to consistent findings (Saunders et al., 2009, p. 156). As the topic itself is the state of sustainable digital advertising, which is evolving and time-bound, the results would be different if the same survey were made now. IAB Finland intends to repeat the research next year and compare the results to see what direction the advertising industry is going. As the survey was done in close collaboration with the Sustainable Digital Advertising Committee of IAB Finland, which consisted of multiple digital advertising professionals presenting different operators in the industry, and it was based on IAB Europe's survey and the most recent academic research, it can be said that the survey describes quite well the current idea and elements what the state of sustainable digital advertising consists of. However, as we are dealing with a relatively new concept, the elements might change and be different in the future.

Validity evaluates whether the findings truly depict what they are supposed to. External validity or generalisability describes whether the findings are generalisable. (Saunders et al., 2009, pp. 157-158) The biggest challenges with validity and external validity in the research are the sizes of the samples and the need for constant translations between Finnish and English. The survey sample size of 53 respondents is relatively small. However, it still gives a satisfactory description of the research topic of the state of sustainable digital advertising within Finland. Using mixed methods increases the validity of the research, helps create knowledge, guides the collection of data and it can also help gain a deeper and broader understanding of the phenomenon (Hurmerinta-Peltomäki & Nummela, 2006).

The commissioning company wanted the survey done in Finnish as their experience has shown that English surveys gain fewer responses than Finnish ones. As we are operating in Finland and researching the state of sustainable digital advertising in Finland, it is a rather indisputable decision to collect the data in Finnish. However, as the master thesis is in English, the findings are translated and partly analysed in English. This means the author

works as a sort of linguistic filter between the data and the findings. Especially when researching the concept of sustainable digital advertising, which is a very linguistic topic, sensitivity, preciseness and cautiousness in translations are encouraged. There is always a risk of losing information in translation. These risks were mitigated by collaborating closely with the Sustainable Digital Advertising Committee of IAB Finland while translating and creating the survey, reflecting the survey results in the interviews, and an ongoing discussion within the industry.

Other challenges were the time constraint and the IAB Europe survey, which set a framework for the IAB Finland survey. Data collection was strictly time-constrained in both data collection methods. The initial results of the online questionnaire were wished to be presented in May on the 25th anniversary of IAB Finland, leaving less than two months time to collect the responses. The interviews were held at the end of the year, limited by the time needed for an extensive analysis and the final thesis deadline.

The IAB Europe survey was more based on interest in sustainability within the European advertising industry than any scientific arguments or theory, at least in authors perspective. Even though the IAB Finland survey was combined with academic literature and local market knowledge, the framework was still tight. It set limits to the number and style of questions asked due to the commissioning company and sustainable digital advertising committee's wish to have comparable data. On the other hand, if the survey and data collection had been done as a separate project, it could have lacked the focused market interest it now carries with the chosen setting.

As recommendations for the advertising industry, the author would suggest proactively developing common standards, raising awareness, and continuing the open discussion. The message from the advertising industry seems clear: more training and knowledge needs to be provided. Instead of relying solely on third-party service providers for sustainable advertising solutions, proactively seeking knowledge and collaboration around the topic is essential. The Finnish advertising industry lags in measuring advertising-related greenhouse gas emissions but also participation in sustainability-related initiatives, whether within the industry or on a general level. There could even be a national sustainable digital advertising initiative to raise awareness around the topic, highlighting the needs and specific challenges of the Finnish advertising industry. Engaging actively and publicly in advancing sustainability could create a competitive edge within the industry.

5.1 Future research

More research on sustainable digital advertising and the connection between advertising, sustainability and the greenhouse gas emissions are needed. It is recommendable to study more profoundly the connection between the greenhouse gas emissions of ICT and the proportion of digital advertising on a global scale. There are very few studies concerning the matter, thus shadowing the topic of carbon emission in digital advertising.

The discussion around the sustainable digital advertising and especially its carbon footprint still lacks standards and a framework for agreed concepts and methods, especially if the reporting of the greenhouse gas emissions relevant to advertising will be regulated. Another valuable topic would contribute to the research and create the different elements of a holistic, sustainable digital advertising framework that would consider the complete supply chain of digital advertising with different phases but would also consider the different operators in the digital advertising ecosystem.

References

- Ad Green. (n.d.). *What we do*. Retrieved 27 June 2023 from <https://weareadgreen.org/about-us#adgreen-overview>.
- Ad Net Zero. (n.d.). *Why join us*. Retrieved 19 June 2023 from <https://adnetzero.com/why-join-us/>
- Alphabet. (2023, February 2). *Alphabet Annual report 2022*.
https://abc.xyz/investor/static/pdf/2022_alphabet_annual_report.pdf?cache=4316f0c
- Alturki, R. (2021). *Research Onion for Smart IoT-Enabled Mobile Applications*. Scientific programming, 2021, 1-9. <https://doi.org/10.1155/2021/4270998>
- Atkinson, L., & Rosenthal, S. (2014). *Signaling the green sell: The influence of eco-label source, argument specificity, and product involvement on consumer trust*. Journal of Advertising, 43(1), 33-45. doi: 10.1080/00913367.2013.834803
- Banerjee, S., Gulas, C. S., & Iyer, E. (1995). *Shades of green: A multidimensional analysis of environmental advertising*. Journal of Advertising, 24(2), 21–31.
<https://doi.org/10.1080/00913367.1995.10673473>
- Batmunkh, A. (2022). *Carbon Footprint of The Most Popular Social Media Platforms*. Sustainability, 14(4), 2195. MDPI AG. <http://dx.doi.org/10.3390/su14042195>
- Berliner, D., & Prakash, A. (2015). *“Bluwashing” the Firm? Voluntary Regulations, Program Design, and Member Compliance with the United Nations Global Compact*. Policy Studies Journal, 43(1), 115-138. <https://doi-org.ezproxy.hamk.fi/10.1111/psj.12085>
- Borin, N. (2013). *Greenwashing*. In C. Laszlo (Ed.), Business strategies and management for sustainability. (pp. 121-125). Berkshire Publishing Group.
- Britannica, T. (2023, May 5). *Editors of Encyclopaedia. Encyclopaedia Britannica*. Retrieved 12th June 2023 from <https://www.britannica.com/topic/advertising>
- CDP. (2023, March). *Scoping Out: Tracking Nature Across the Supply Chain*. Global Supply Chain Report 2022. Retrieved 26 June 2023 from <https://cdn.cdp.net/cdp-production/cms/reports/documents/000/006/918/original/CDP-Supply-Chain-Report-2022.pdf?1678870769>
- CDP. (2022, April 11). *CDP Technical Note: Relevance of Scope 3 Categories by Sector*. Retrieved 26 June 2023 from https://cdn.cdp.net/cdp-production/cms/guidance_docs/pdfs/000/003/504/original/CDP-technical-note-scope-3-relevance-by-sector.pdf
- Chang, C. (2011). *Feeling ambivalent about going green, implications for green advertising processing*. Journal of Advertising, 40(4), 19-31. doi: 10.2307/23208833
- Change the Brief. (n.d.). *WANT TO #ChangeTheBrief?* Retrieved 28 June 2023 from <https://www.changethebrief.org/>

- Clean Creatives. (n.d.). *The future of creativity is clean*. Retrieved 27 June 2023 from <https://cleancreatives.org/>
- Clean Creatives. (2023, February 7). *Clean Creatives Uses @AdNetZero Social Media Handles to Demand Ad Net Zero Address Fossil Fuel Polluters*. <https://cleancreatives.org/news/clean-creatives-uses-adnetzero-social-media-handles-to-demand-ad-net-zero-address-fossil-fuel-polluters>
- Creatives for Climate. (n.d.). *Who we are*. Retrieved 28 June 2023 from <https://www.creativesforclimate.co/about>
- Curry, D. (2023, October 9). *Business of apps: TikTok App report 2023*. Retrieved 28 October 2023 from <https://www.businessofapps.com/data/tiktok-report/>
- Dangelico, R. M., & Vocalelli, D. (2017). "Green Marketing": An analysis of definitions, strategy steps, and tools through a systematic review of the literature. *Journal of Cleaner Production*, 165, 1263–1279. <https://doi.org/10.1016/j.jclepro.2017.07.184>
- Dencheva, V. (2023, August 29). *TikTok ad revenue worldwide 2020-2027*. Statista. Retrieved 28 October 2023 from <https://www.statista.com/statistics/1305708/tiktok-ad-revenue/>
- Directive 2022/2464/EU. *Corporate Sustainability Reporting*. European Parliament and Council. <http://data.europa.eu/eli/dir/2022/2464/oj>
- Dufva, M., & Rekola, S. (2023). *Understanding an era of surprises*. https://www.sitra.fi/app/uploads/2023/03/sitra_megatrends-2023_v3.pdf
- Engert, S., Rauter, R., & Baumgartner, R. J. (2016). *Exploring the integration of corporate sustainability into strategic management: A literature review*. *Journal of Cleaner Production*, 112, 2833-2850. <https://doi-org.ezproxy.hamk.fi/10.1016/j.jclepro.2015.08.031>
- Elkington, J. (2013). *Triple Bottom Line*. In C. Laszlo (Ed.), *Business strategies and management for sustainability*. (pp. 121-125). Berkshire Publishing Group.
- European Commission. (n.d.-a). *Green Claims*. European Commission. Environment. https://environment.ec.europa.eu/topics/circular-economy/green-claims_en
- European Commission. (n.d.-b). *The European Green Deal*. https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en
- European Commission. (n.d.-c). *Corporate sustainability reporting*. European Commission - Capital Markets Union and Financial Markets. https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en
- European Commission. (2001). *Green paper: Promoting a European Framework for Corporate Social Responsibility*. European Commission, Luxembourg.

https://ec.europa.eu/commission/presscorner/api/files/document/print/en/doc_01_9/DOC_01_9_EN.pdf

- European Economic and Social Committee. (2021a, March 31). *Advertising for modern, responsible consumption (own-initiative opinion)*. <https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/advertising-modern-responsible-consumption-own-initiative-opinion>
- European Economic and Social Committee. (2021b, October 27). *Sustainable advertising has the power to drive Europe's green transition*. <https://www.eesc.europa.eu/en/news-media/news/sustainable-advertising-has-power-drive-europes-green-transition>
- Ferreboeuf, H., Berthoud, F., Bihouix, P., Fabre, P., Kaplan, D., Lefèvre, L. (2019, March). *Lean ICT, Towards Digital Sobriety; The Shift Project*. Retrieved June 14. <https://theshiftproject.org/en/article/lean-ict-our-new-report/>
- FIBS. (2023, May 10). *Summary: Sustainability in Finland*. https://fibsry.fi/wp-content/uploads/2023/05/FIBS_Sustainability-in-Finland-2023_Summary_Final-1.pdf
- Fowler, A.R., & Close, A.G. (2012). *It ain't easy being green: Macro, meso, and micro green advertising agendas*. *Journal of Advertising*, 41(4), 119-132. doi: 10.1080/00913367.2012.10672461
- Freitag, C., Berners-Lee, M., Widdicks, K., Knowles, B., Blair, G. S., & Friday, A. (2022). *The real climate and transformative impact of ICT: A critique of estimates, trends, and regulations*. *Patterns (New York, N.Y.)*, 3(8), 100576. <https://doi.org/10.1016/j.patter.2022.100576>
- FuiYeng, W., & Yazdanifard, R. (2015). *Green Marketing: A Study of Consumers' Buying Behavior in Relation to Green Products*. *Global Journal of Management and Business Research*, 15(5), 17-23.
- GDPR.Eu. (2018). *What is GDPR, the EU's new data protection law?* <https://gdpr.eu/what-is-gdpr/>
- Good-Loop. (2022a). *Decarbonise your media with Good Loop*. https://good-loop.com/download/Good-Loop_Green_Media_Whitepaper_2022.pdf
- Good-Loop. (2022b, August). *Counting carbon: How U.K. marketers are tackling Adland's climate crisis*. <https://counting-carbon.good-loop.com/>
- Good-Loop. (2022c, August). *Counting carbon: How U.S. marketers are tackling Adland's climate crisis*. <https://counting-carbon.good-loop.com/>
- Good-Loop. (n.d.-a). *Carbon calculator*. Retrieved 23 June 2023 from <https://good-loop.com/resources/carbon-calculator>
- Good-Loop. (n.d.-b). *What we do*. Retrieved 28 June 2023 from <https://good-loop.com/what-we-do>

- Gournelos, T., Hammonds, J. R., & Wilson, M. A. (2019). *Doing academic research: A practical guide to research methods and analysis*. Taylor & Francis Group.
- Greenhouse Gas Protocol. (n.d.). *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*. https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf
- Greenhouse Gas Protocol. (n.d.-a). *Corporate Value Chain (Scope 3) Accounting and Reporting Standard* [image].
https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf
- Gubrium, J. F. (2012). *The Sage Handbook of interview research: The complexity of the craft* (Second edition.). SAGE. <https://doi.org/10.4135/9781452218403>
- Hartmann, P., Marcos, A., Castro, J., Apaolaza, V. (2023). *Perspectives: Advertising and climate change - Part of the problem or part of the solution?* International journal of advertising, 42(2), 430-457. <https://doi.org/10.1080/02650487.2022.2140963>
- Hesse-Biber, S. N. (2010). *Mixed methods research: Merging theory with practice*. The Guilford Press.
- Hirsjärvi, S., Hurme, H. (2022). *Tutkimushaastattelu: Teemahaastattelun teoria ja käytäntö* ([2. painos].). Gaudeamus.
- Ho C., Lin H. (2015). *Analysis of and control policies for light pollution from advertising signs in Taiwan*. Lighting Research & Technology 47(8):931-944.
doi:10.1177/1477153514559795
- Hurmerinta-Peltomäki, L., Nummela, N. (2006). *Mixed methods in international business research: A value-added perspective*. MANAGE. INT. REV. 46, 439–459. <https://doi-org.ezproxy.hamk.fi/10.1007/s11575-006-0100-z>
- Hyvärinen, M., Nikander, P., Ruusuvoori, J., & Aho, A. L. (2017). *Tutkimushaastattelun käsikirja*. Vastapaino.
- IAB. (n.d.). Interactive Advertising Bureau. IAB Our story. <https://www.iab.com/our-story/>
- IAB Europe. (2023, July). *Adex benchmark 2022 report*. https://stg-iabeurope-iabeuropeold.kinsta.cloud/wp-content/uploads/2023/07/IAB-Europe_AdEx-Benchmark-2022_REPORT-2.pdf
- IAB Europe. (2023a, February 2). *State of readiness - Sustainability in digital advertising report*. https://iabeurope.eu/wp-content/uploads/2023/02/State-of-Readiness-Sustainability-in-Digital-Advertising-Report-2023-_Final_Version.pdf
- IAB Europe. (2023b, February 16). *IAB Europe's Sustainability Standards Committee Share Agreed Definition of Sustainable Digital Advertising*. <https://iabeurope.eu/blog/iab-europes-sustainability-standards-committee-share-agreed-definition-of-sustainable-digital-advertising/>

- IAB Finland. (n.d.-a). *Mikä IAB Finland on?* <https://www.iab.fi/iab/jasenyyss/tietoa-iabsta.html>
- IAB Finland. (n.d.-b). *Vastuullinen digimainonta*. Retrieved 16 June 2023 from <https://www.iab.fi/markkina/vastuullinen-digimainonta.html>.
- IAB Finland. (2023a, February 3). *Verkkomainonta 10 % kasvussa vuonna 2022*. Retrieved 26 October 2023 from <https://www.iab.fi/uutiset-blogi/markkinaluvut/verkkomainonta-10-kasvussa-vuonna-2022.html?p1385=2>
- IAB Finland. (2023b, May 25). *Vastuullisen digimainonnan määritelmä*. Retrieved 30 October 2023 from <https://www.iab.fi/uutiset-blogi/iablogi/iablogi/vastuullisen-digimainonnan-maaritelma.html?p1083=5>
- Johns, A. N., Chapa, S., Brooks, N., Coleman, H., and DuBois, M. (2022). *Rainbow-Washing Away Customers: Does the Consumer's Perception of Rainbow-Washing Affect Purchasing Behavior?* Association of Marketing Theory and Practice Proceedings 2022. 9. https://digitalcommons.georgiasouthern.edu/amtp-proceedings_2022/9
- Kananen, J. (2014). *Verkkotutkimus opinnäytetyönä: Laadullisen ja määrällisen verkkotutkimuksen opas*. Jyväskylän ammattikorkeakoulu.
- Kaupparehti. (2020, December 30). *M&M listaa Suomen 50 suurinta mediayhtiötä: viime vuonna moni kiri kasvuun*. Retrieved 12 November 2023 from <https://www.kaupparehti.fi/uutiset/mm-listaa-suomen-50-suurinta-mediayhtiota-viime-vuonna-moni-kiri-kasvuun/61f11356-13a2-46a6-9d01-3c3ed05294bf>
- Kumar, V., Rahman, Z., & Kazmi, A. A. (2013). *Sustainability Marketing Strategy: An Analysis of Recent Literature*. *Global Business Review*, 14(4), 601–625. <https://doi.org/10.1177/0972150913501598>
- Kuluttajaliitto. (n.d.). *Yhteiskuntavastuu*. <https://www.kuluttajaliitto.fi/materiaalit/yhteiskuntavastuu/>.
- Kuluttajansuojalaki 38/1978. <https://www.finlex.fi/fi/laki/ajantasa/1978/19780038>
- Kuluttajavirasto. (2002). *The Use of Environmentally Oriented Claims in Marketing*. Retrieved 3 November 2023 from <https://www.kkv.fi/en/consumer-affairs/facts-and-advice-for-businesses/the-consumer-ombudsmans-guidelines/the-use-of-environmentally-oriented-claims-in-marketing/>
- Kvantitatiivisen tutkimuksen verkkokäsikirja. (n.d.) *Tilastollinen päättely*. Tampere: Yhteiskuntatieteellinen tietoaarkisto. Retrieved 30 September 2023 from <https://www.fsd.tuni.fi/fi/palvelut/metodit/metodit/kvanti/paattely/paattely/>
- Lubitow, A., & Davis, M. (2011). *Pastel injustice: The corporate use of pinkwashing for profit*. *Environmental Justice*, 4(2), 139-144. <https://doi.org/10.1089/env.2010.0026>
- Lunde, M. B. (2018). *Sustainability in marketing: A systematic review unifying 20 years of theoretical and substantive contributions (1997–2016)*. *AMS Review*, 8(3), 85–110. <https://doi.org/10.1007/s13162-018-0124-0>

- Markkinointiliitto. (n.d.). *Mikä on MARK?* Retrieved 14 November 2023 from <https://www.markkinointiliitto.fi/mika-on-mark/>
- McKim, C. A. (2017). *The Value of Mixed Methods Research: A Mixed Methods Study*. *Journal of Mixed Methods Research*, 11(2), 202–222. <https://doi-org.ezproxy.hamk.fi/10.1177/1558689815607096>
- McStay, A. (2017). *Digital advertising*. Bloomsbury Publishing.
- Meta. (2023, February 1). *Meta reports Fourth Quarter and Full year 2022 results*. Retrieved 28 October 2023 from https://s21.q4cdn.com/399680738/files/doc_financials/2022/q4/Meta-12.31.2022-Exhibit-99.1-FINAL.pdf
- Ministry of Economic Affairs and Employment of Finland. (n.d.) *Corporate social responsibility (CSR)*. Retrieved 31 July 2023 from <https://tem.fi/en/social-responsibility>
- Minton, E., Lee, C., Orth, U., Kim, C. H., & Kahle, L. (2012). *Sustainable marketing and social media: A cross-country analysis of motives for sustainable behaviors*. *Journal of advertising*, 41(4), 69-84. <https://doi.org/10.1080/00913367.2012.10672458>
- Molina-Azorín J. F. (2011). *The use and added value of mixed methods in management research*. *Journal of Mixed Methods Research*, 5(1), 7-24.
- Moulard, L., Medioni, E., Warlop, R., Harand, P., Rollet, L., & Le Borgne, S. (2022). *The carbon footprint of media campaigns*. Short version. fifty-five. <https://get.fifty-five.com/carbon-footprint-study-en/>
- Nyilasy, G., Gangadharbatla, H., & Paladino, A. (2014). *Perceived Greenwashing: The Interactive Effects of Green Advertising and Corporate Environmental Performance on Consumer Reactions*. *Journal of Business Ethics*, 125(4), 693–707. <https://doi.org/10.1007/s10551-013-1944-3>
- Ormesher, E. (2023, February 7). *Activists hijack Ad Net Zero's social media accounts on day of US launch*. *The Drum*. Retrieved 27 June 2023 from <https://www.thedrum.com/news/2023/02/07/activists-hijack-ad-net-zero-s-social-media-accounts-day-us-launch>
- Pope, S., Wæraas, A. (2016) *CSR-Washing is Rare: A Conceptual Framework, Literature Review, and Critique*. *J Bus Ethics* 137, 173–193. <https://doi-org.ezproxy.hamk.fi/10.1007/s10551-015-2546-z>
- Purpose Disruptors. (n.d.). *About Us*. Retrieved 27 June 2023 from <https://www.purposedisruptors.org/about-us>
- Pärssinen, M., Kotila, M., Cuevas, R., Phansalkar, A., & Manner, J. (2018). *Environmental impact assessment of online advertising*. *Environmental Impact Assessment Review*, 73, 177–200. <https://doi.org/10.1016/j.eiar.2018.08.004>

- Reich, B.J., & Armstrong Soule, C.A. (2016). *Green demarketing in advertisements: Comparing “Buy green” and “Buy less” appeals in product and institutional advertising contexts*. *Journal of Advertising*, 45(4), 441-458. doi: 10.1080/00913367.2016.1214649
- Ritchie, H. (2020, October 22). *Climate change and flying: what share of global CO2 emissions come from aviation?* Our world in data. Retrieved 15 June 2023. <https://ourworldindata.org/co2-emissions-from-aviation>
- Saldana, J., Beretvas, N., & Leavy, P. (2011). *Fundamentals of Qualitative Research*. Oxford University Press, Incorporated.
- Sander, F., Föhl, U., Walter, N., & Demmer, V. (2021). *Green or social? An analysis of environmental and social sustainability advertising and its impact on brand personality, credibility, and attitude*. *Journal of Brand Management*, 28(4), 429–445. <https://doi.org/10.1057/s41262-021-00236-8>
- Santarius, T., Dencik, L., Diez, T., Ferreboeuf, H., Jankowski, P., Hankey, S., Hilbeck, A., Hilty, L.M., Höjer, M., Kleine, D., Lange, S., Pohl, J., Reisch, L., Ryghaug, M., Schwanen, T., Staab, P. (2023). *Digitalization and Sustainability: A Call for a Digital Green Deal*. *Environmental science & policy*, 147, 11-14. <https://doi.org/10.1016/j.envsci.2023.04.020>
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. Pearson education limited.
- Scope3. (2023a). *The state of sustainability report. Q2 2023*. Retrieved 3 November 2023 from <https://scope3.com/news/the-state-of-sustainable-advertising-q2-2023>
- Scope3. (2023b). *The state of sustainability report. Q1 2023*. <https://www.scope3.com/news/scope3-report-programmatic-advertising-generates-215-000-metric-tons-of-carbon-emissions-each-month-across-five-major-global-economies>
- Sitra. (2023). *Megatrend cards*. Megatrends, the future belongs to everyone. <https://media.sitra.fi/app/uploads/2023/03/sitra-megatrendcards-2023.pdf>
- Sitra. (2018). *Mitä nämä käsitteet tarkoittavat?* <https://www.sitra.fi/artikkelit/mita-nama-kasitteet-tarkoittavat/>
- Sitra. (n.d.). *Hiilineutraali*. Tulevaisuussanasto. <https://www.sitra.fi/tulevaisuussanasto/hiilineutraali/>
- Statista. (n.d.). *Digital advertising - Worldwide*. Retrieved 12th June 2023 from <https://www.statista.com/outlook/dmo/digital-advertising/worldwide?currency=EUR>
- Sterbenk, Y., Champlin, S., Windels, K., & Shelton, S. (2022). *Is Femvertising the New Greenwashing? Examining Corporate Commitment to Gender Equality*. *Journal of business ethics*, 177(3), 491-505. <https://doi.org/10.1007/s10551-021-04755-x>

- Tilastokeskus. (n.d.). *Suomen virallinen tilasto (SVT): Väestörakenne*. Retrieved 27 October 2023 from <https://www.stat.fi/tilasto/vaerak>
- United Nations. (n.d.) *The 17 goals*. Department of Economic and Social Affairs Sustainable Development. <https://sdgs.un.org/goals>
- United Nations. (n.d.-a). *Goal 8. Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all*. <https://sdgs.un.org/goals/goal8>
- United Nations. (n.d.-b). *Goal 12. Ensure sustainable consumption and production patterns*. <https://sdgs.un.org/goals/goal12>
- United Nations. (n.d.-c). *Goal 13. Take urgent action to combat climate change and its impacts*. <https://sdgs.un.org/goals/goal13>
- Vilkka, H. (2021). *Tutki ja kehitä* (5th edition.). PS-kustannus.
- Wang, J., Zhang, W. and Yuan, S. (2017). *Display Advertising with Real-Time Bidding (RTB) and Behavioural Targeting*. Foundations and Trends® in Information Retrieval: Vol. 11: No. 4-5, pp 297-435. <http://dx.doi.org/10.1561/15000000049>
- Wang, J., Zhang, W. and Yuan, S. (2017a). *Display Advertising with Real-Time Bidding (RTB) and Behavioural Targeting* [Image]. Foundations and Trends® in Information Retrieval: Vol. 11: No. 4-5, pp 297-435. <http://dx.doi.org/10.1561/15000000049>
- WCED. (1987). *Report of the World Commission on Environment and Development: Our Common Future*. Retrieved 15 November 2023, from <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>
- WFA. (n.d.). *Who we are*. Retrieved 16 June 2023 from <https://wfanet.org/about-wfa/who-we-are>.
- WFA Planet Pledge. (n.d.). *Planet Pledge*. Retrieved 16 June 2023 from <https://wfanet.org/leadership/planet-pledge/about#>
- Wielki, J., & Grabara, J. (2018). *The Impact of Ad-Blocking on the Sustainable Development of the Digital Advertising Ecosystem*. Sustainability, 10(11), Article 11. <https://doi.org/10.3390/su10114039>
- Ympäristöministeriö. (n.d.). *Mitä on kestävä kehitys?* <https://ym.fi/mita-on-kestava-kehitys>

Appendix 1. Overview of the green advertising concepts

Concept	Definition	Features	Year	Source
Green advertising	In Nyilasy et al., (2014) is a description given by Banerjee et al. (1995, p.22) which define green advertising as “any ad that meets one or more of the following criteria: (1) explicitly or implicitly addresses the relationship between a product/service and the biophysical environment, (2) promotes a green lifestyle with or without highlighting a product/service, and (3) presents a corporate image of environmental responsibility”. (Nyilasy et al., 2014).	- the relationship between a product/service and the environment, - promotes a green lifestyle with or without highlighting a product/service, and - presents a corporate image of environmental responsibility”	1995	Nyilasy, G., Gangadharbatla, H., & Paladino, A. (2014). Perceived Greenwashing: The Interactive Effects of Green Advertising and Corporate Environmental Performance on Consumer Reactions. <i>Journal of Business Ethics</i> , 125(4), 693–707. https://doi.org/10.1007/s10551-013-1944-3 Original source that couldn't be reached: Banerjee, S., Gulas, C. S., & Iyer, E. (1995). Shades of green: A multidimensional analysis of environmental advertising. <i>Journal of Advertising</i> , 24(2), 21–31. https://doi.org/10.1080/00913367.1995.10673473
Green advertising	Green advertising is also defined as “advertising that claims the advertised products are environmentally friendly or that their production process conserves resources or energy” (Chang, 2011, p.23).	- advertising environmentally friendly products - production conserves energy or resources	2011	Chang, C. (2011). Feeling ambivalent about going green, implications for green advertising processing. <i>Journal of Advertising</i> , 40(4), 19-31. doi: 10.2307/23208833
Green advertising	"Advertising messages promoting sustainable goods or services are often labelled as green advertising" (Minton et al, 2012, p. 70).	- promoting sustainable goods or services and/or	2012	Minton, E., Lee, C., Orth, U., Kim, C. H., & Kahle, L. (2012). Sustainable marketing and social media: A cross-country analysis of motives for sustainable behaviors. <i>Journal of advertising</i> , 41(4), 69-84.

Green advertising	"We define green advertising as any advertising that explicitly or implicitly promotes an awareness of environmental issues and/or suggests behaviours useful in minimizing or correcting these environmental issues" (Fowler & Close, 2012, p.5).	- promotes an awareness of environmental issues - suggests behaviours useful in minimizing or correcting environmental issues	2012	Fowler, A.R., & Close, A.G. (2012). It ain't easy being green: Macro, meso, and micro green advertising agendas. <i>Journal of Advertising</i> , 41(4), 119-132. doi: 10.1080/00913367.2012.10672461
Green advertising	To call advertising green, it must have "environmentally friendly features and attributes as a persuasive selling point" (Atkinson & Rosenthal, 2014, p. 33).	- environmentally friendly features as a selling point	2014	Atkinson, L., & Rosenthal, S. (2014). Signaling the green sell: The influence of eco-label source, argument specificity, and product involvement on consumer trust. <i>Journal of Advertising</i> , 43(1), 33-45. doi: 10.1080/00913367.2013.834803
Green advertisement	"Green advertisement is one of the ways to influence consumers' purchasing behavior that will strongly encourage consumers to buy products that are ecofriendly to our environment." (FuiYeng & Yazdanifard, 2015, p.19).	-influence consumers' eco-friendly purchasing behaviour	2015	FuiYeng, W., & Yazdanifard, R. (2015). Green Marketing: A Study of Consumers' Buying Behavior in Relation to Green Products. <i>Global Journal of Management and Business Research</i> , 15(5), 17-23.
Green advertising	"Green advertising appeals communicate about products or services that are produced in a manner that is more friendly to the environment, such as those made from recycled and recyclable components or manufacturing processes that have improved energy efficiencies. Alternatively, green ads may simply communicate the brand's overall commitment to sustainability". (Reich & Armstrong, 2016, p.3).	- communication about products produced in an environmentally friendly manner - communication about organization's general commitment to sustainability	2016	Reich, B.J., & Armstrong Soule, C.A. (2016). Green demarketing in advertisements: Comparing "Buy green" and "Buy less" appeals in product and institutional advertising contexts. <i>Journal of Advertising</i> , 45(4), 441-458. doi: 10.1080/00913367.2016.1214649

Social sustainability advertising	"To differentiate the term from other current uses, we therefore propose to apply 'social sustainability advertising' to our context, which we define—based on foundations of 'green' and CSR advertising—as advertising designed to inform stakeholders about a firm's efforts, commitment, and achievements toward contributing to a better society" (Sander et al., 2021).	- inform stakeholders about a firm's efforts, commitment, and achievements toward contributing to a better society	2021	Sander, F., Föhl, U., Walter, N., & Demmer, V. (2021). Green or social? An analysis of environmental and social sustainability advertising and its impact on brand personality, credibility, and attitude. <i>Journal of Brand Management</i> , 28(4), 429–445. https://doi.org/10.1057/s41262-021-00236-8
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Appendix 2. Data management plan

The data was in a separate folder on the author's personal computer or the Häme University of Applied Sciences OneDrive account. Access to this folder was given only to the supervisor of the master thesis. The raw data is deleted after the master thesis is successfully published.

The survey data was collected anonymously through the secure survey platform SurveyPal through IAB Finland's account. It was also encouraged to leave any identifying information out of the open answers. The author downloaded the results to her computer, secured by up-to-date online safety programs and passwords. After the analysis, the author removed the documents from the computer.

The interviews were conducted through the Teams conference tool via the Häme University of Applied Sciences account. The interviews were recorded with the permission of the interviewees. Transcription was real-time, and the names were coded after downloading the text document. The anonymity was ensured by deleting or covering any identifiable data and using categories like representer of media. All the raw data will be deleted once the analysis is done and the master thesis is successfully published.

The relevant data forms for this thesis are the text, numbers, and audio recordings. The questionnaire responses were handled using IAB Finland's SurveyPal authors Häme University of Applied Sciences' Microsoft Office tools, such as Excel and PowerPoint. The recordings and transcriptions of the interviews were conducted and received through Teams. There was no sensitive content involved.

The survey framework will stay in the SurveyPal survey platform of IAB Finland and might be repeated in the following years by the commissioning company; therefore, preserving the results is also essential as they can follow the development of sustainability within the Finnish advertising industry.

Appendix 3. Sustainable digital advertising Finland -survey

Background information

1. Which of the following best describes the company you represent?
 - Advertiser / brand
 - Agency (e.g., advertising, media, or digital agency)
 - Publisher
 - Ad Tech Company
 - Industry association
 - Something else
2. How many employees does the company have?
 - 1-100
 - 101-500
 - 501-1000
 - 1000-5000
 - 5,001-10,000
 - 10,000 +
3. In which regions does the company operate? You can choose several.
 - Finland
 - Other Nordic countries (Sweden, Norway, Denmark, Iceland)
 - Europe
 - Internationally
 - UK
 - USA
 - Something else
4. Which of the following best describes your role in the company?
 - Chief Sustainability Officer/Manager
 - Director
 - Manager
 - Expert
 - Entrepreneur
 - Something else
5. Is sustainability relevant to your own work role?
 - Yes, I do a lot of sustainability work
 - Yes, partly related
 - Not related, but I'm a bit familiar with it
 - No, I'm not very familiar with it
 - Something else that

Sustainable digital advertising

6. What do you think the term sustainable digital advertising means?
7. Which of the following characteristics do you think best describe sustainable digital advertising?
 - Promoting sustainable products or services
 - Emphasizing the sustainable qualities of a product or service
 - Promoting a sustainable/green lifestyle
 - Communication about corporate responsibility activities
 - Improving the responsible brand image
 - Raising public awareness of sustainability issues

- Striving to make consumers' purchasing behavior more sustainable.
 - Reducing the carbon footprint caused by the production and distribution of digital advertising.
 - Reduce the negative social and environmental impacts of digital advertising (e.g., light pollution)
 - Advertising for the right target group, in the right media environment
 - Financial sustainability is considered.
 - Taking accessibility into account
 - Monitoring laws and regulations regulating advertising.
 - Avoiding greenwashing
 - Something else, what{{open}}
8. How sustainable is the digital advertising that is made or produced by the company you represent? (0-10, not sustainable at all – very sustainable)
 9. Does the company you represent measure the sustainability of digital advertising?
 - If yes, how is the sustainability of digital advertising measured or will it be measured?
 10. Does the company you represent measure carbon footprint of digital advertising?
 - If yes, how is the carbon footprint of digital advertising measured or intended to be measured?
 11. Is the goal of the company you represent to make digital advertising carbon neutral*? *Carbon-neutral digital advertising: The carbon footprint of digital advertising is minimized, and the remaining emissions are compensated.
 - If yes, how have you done or are you going to make digital advertising carbon neutral? E.g., Carbon-neutral products / services, own compensation strategy?

Sustainability within companies

Corporate social responsibility (corporate responsibility) refers to the promotion of sustainable development in a company. The operations of a responsible company are reliable, economical, socially acceptable, and respectful of the environment. (Kuluttajaliitto (n.d.).

Sustainable development is a continuous and guided societal change taking place globally, regionally, and locally with the aim of securing good living opportunities for present and future generations. (Ympäristöministeriö, n.d.).

Carbon footprint refers to carbon dioxide emissions caused by human activities. In most cases, the carbon footprint is reported as carbon dioxide equivalents (CO₂e), which considers not only carbon dioxide emissions but also other significant greenhouse gas emissions, the most important being methane (CH₄) and nitrous oxide (N₂O). The carbon footprint can be determined for a company, organization, activity, or product. (Sitra, 2018).

Carbon neutrality means producing only as much carbon dioxide emissions as can be sequestered. In other words, the carbon footprint of a carbon-neutral society, product or system throughout its life cycle is zero. (Sitra, n.d.).

Sources:

Kuluttajaliitto. (n.d.). *Yhteiskuntavastuu*.

<https://www.kuluttajaliitto.fi/materiaalit/yhteiskuntavastuu/>.

Sitra. (2018). *Mitä nämä käsitteet tarkoittavat?* <https://www.sitra.fi/artikkelit/mita-nama-kasitteet-tarkoittavat/>

Sitra. (n.d.). *Hiilineutraali*. Tulevaisuussanasto.
<https://www.sitra.fi/tulevaisuussanasto/hiilineutraali/>

Ympäristöministeriö. (n.d.). *Mitä on kestävä kehitys?* <https://ym.fi/mita-on-kestava-kehitys>

12. Does your company have a sustainability-related strategy or action program?
13. Does the company you represent measure its own carbon footprint?
 - If yes, how does the company measure or will it measure its own carbon footprint?
14. Does the company you represent aim for carbon neutrality?
15. If the company has progressed in terms of sustainability, what have you done so far?
 - We have not done anything related to sustainability.
 - We have created a sustainability checklist.
 - We have carried out/will carry out a sustainability audit.
 - i. If the company has done or is doing a sustainability audit, will it be public?
 - The company is committed to the Science Based Targets (SBT) initiative.
 - We have carried out a study on this topic.
 - We have created related case studies.
 - The company employs a person responsible for sustainability.
 - We are committed to the industry's responsibility programme, for example. Ad Net Zero.
 - i. Which industry sustainability programs is the company committed to?
 - We have calculated the carbon footprint of some campaigns.
 - We have calculated the carbon footprint of all campaigns.
 - We have developed low-carbon solutions or products.
 - We have launched green, low-carbon or sustainable products or services.
 - i. What kind of low-carbon products or services has the company developed or introduced to the market?
 - We have communicated our environmental impact to our customers.
 - We prepare a sustainability report annually.
 - The company has a certificate indicating sustainability (e.g., ISO 14001 etc.)
 - i. What certificates of sustainability does the company you represent have?
 - We take responsibility into account when choosing suppliers / partners.
 - I don't know.
 - Something else, what{{open}}

Industry sustainability

16. How well does the following argument describe the situation within the advertising industry (1=Strongly disagree, 5=Strongly agree)
 - A lot of work is being done for the industry's sustainability
 - The company I represent has prioritized sustainability as a strategic goal.
 - The sustainability of digital advertising is a topic of discussion at several industry events.
 - The sustainability of digital advertising has been comprehensively discussed in industry publications.
 - People know enough about sustainability in the industry.

- It is important for our partners that we work for sustainability
 - It is important for our employees that we work for sustainability
 - Digital advertising in general is already responsible.
17. What do you think is the most significant challenge on the road to responsible digital advertising?
 18. Do you think there is enough information and training available about responsible digital advertising?
 19. In your opinion, what is the most important way to reduce the carbon footprint of digital advertising?
 - Is there any other significant way to reduce the carbon footprint of digital advertising missing from the previous question?
 20. Do you feel that the industry must have an external entity to ensure the measurement and standards of CO2 emissions?
 21. Open question: Is there anything you would like to add regarding responsible digital advertising, or do you want to give feedback on the survey?

Appendix 4. Interview protocol

Interview protocol

Following the framework introduced by Hirsjärvi & Hurme (2022, 5.1. Tutkimussuunnitelman välttämättömyys, tutkimussuunnitelman osat) the research plan and interview protocol as follows:

1. **Main idea and introduction:** Interview relevant experts representing main parts of the digital advertising ecosystem: advertiser, publisher, agency, ad tech and industry association in order to enrich and fulfil the previously collected data and knowledge through the online questionnaire.
2. **Research design:** Semi-structured one-to-one interview
 - a. Theme interview is a semi-structured method with themes similar to all the interviewees. The questions are not specific in the form or order as in a structured interview but neither it is as flexible as an in-depth interview. The main factor in a theme interview is that interview follows specific themes. (Hirsjärvi & Hurme, 2022, 4.2.3 Teemahaastattelu - puolistrukturoitu haastattelu: Miten teemahaastattelu eroaa muista haastatteluista?)
3. **Choosing the target group and interviewees:** Interview dedicated experts representing main parts of the digital advertising ecosystem: advertiser, publisher, agency, ad tech and industry association. The online questionnaire didn't reach any industry association representatives; therefore, it was considered important to get an interview from one representative. Altogether five interviews.
4. **Planning the content of the interview** (see appendix 5 for the structure)
 - a. In a focused interview, one can use theme areas rather than direct questions
5. **Contacting and informing the interviewee:**
 - a. Through IAB Slack channel, LinkedIn and through email.
 - b. Informing about the research, data management and anonymity through official invitation email (see appendix 6).
 - c. Setting up the date - takes approximately 30-45 minutes
6. **Setting up the interview situation:**
 - a. Teams + recording
7. **Analyse the data**

Plan and schedule for the interview

Task	Week, 2023
Plan interview protocol and content	38
Contact interviewees	38-39
Conduct interviews	39-40
Analyse the data	40-41

Appendix 5. Sustainable digital advertising interview themes

1. Background

- a. Title/ work /industry
- b. Level of knowledge within sustainability
- c. Experience in digital advertising

2. Sustainable digital advertising

- a. Concept / What is it
- b. Carbon footprint of advertising
- c. Roles
- d. Challenges & Solutions

3. State of Sustainability within the company and the industry

- a. State of sustainability within the companies and the industry
- b. Partnerships
- c. Rules and regulations

Appendix 6. Invitation email for the interview

Dear recipient,

I kindly invite you to participate in an interview related to my Master Thesis research about Sustainable Digital Advertising. The Master Thesis is part of MBA of Management of Sustainable Business -studies in Häme University of Applied Sciences. My commissioning company is IAB Finland, and the objective of this study is to research the state of sustainability within the advertising industry in Finland, but also further define what is understood with the term sustainable digital advertising within the Finnish advertising industry. These series of interviews are a follow up for an online questionnaire of 53 respondents that took place in March-April 2023.

Your participation is completely voluntary. If you decide to participate, you can choose whether or not you will answer the presented questions. The data will be handled in the most delicate and careful way possible. The anonymity is taken care of by deleting, covering any identifiable data, and using categories like representer of media or industry association. Once the interview is done, the data is transcribed and analysed. Some relevant quotes might be added to the text for illustrative manner and to add credibility. All the raw data will be deleted once the analysis is done.

The interview takes from 30-45 minutes. The language of the interview will be in Finnish or English. The questions are about the theme of sustainable digital advertising. The interview will be conducted through Teams, or if not applicable, by any other video conference tool that allows recording. The recording is essential in order to capture all the crucial data, thus by accepting the interview invite, you also commit to recording the interview. The recording itself will be deleted as soon as the data is analysed.

The suggested interview dates are on...

If you have any available 30-45 minutes slots, please let me know.

Kind regards,

Heidi Blomberg