

Master's Thesis in Strategic Management

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Making the Invisible Visible: Framing Strategies for
Digital Footprint Awareness

A Qualitative Study on Positive and Negative Framing in Dutch Digital Agencies and the Role
of Corporate Culture

Author:

Thomas A.L. Smit

S1084036

Supervisor:

dr. ir. S. Witjes

Second examiner:

dr. M. Hermans

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thomas.smit@ru.nl

Abstract

Amid the rising environmental impact of digital technologies, this study investigates how strategic communication, specifically positive versus negative framing, can enhance corporate awareness of digital footprints. While sustainability gains traction, many organizations remain unaware of emissions linked to their digital operations. Drawing on Goffman's framing theory, this research examines how Dutch digital agencies respond to framed sustainability messages, and how corporate culture moderates these effects.

Using a qualitative, exploratory and deductive research design, semi-structured interviews were conducted with six digital agencies and one academic expert. Respondents were presented with both positive and negative frames about digital sustainability. Thematic analysis revealed that positive framing elicited more engagement, reflection, and willingness to act, while negative framing triggered defensiveness or urgency.

Corporate culture, particularly sustainability orientation, decision-making logic and openness to change, emerged as key moderating factor. Findings suggest that positive framing, when aligned with organizational values, can effectively raise awareness and promote sustainable digital practices in the corporate sector.

Keywords: Digital sustainability, Digital footprints, Framing strategies, Corporate awareness, Corporate culture

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1. Introduction

In recent years, the digitalization of work and communication has accelerated rapidly, especially following the COVID-19 pandemic. Lockdowns and remote work policies have led to an unprecedented surge in the use of digital technologies for online meetings, streaming, cloud storage, and digital collaboration (Amankwah-Amoah et al., 2021; Martínez-Acosta et al., 2023). While digitalization is often perceived as clean and efficient, its growing energy demands tell a different story. The sharp rise in internet usage and cloud-based services has contributed significantly to global electricity consumption and related CO₂ emissions, making the digital sector an increasingly relevant contributor to environmental degradation (Balta et al., 2021; Oo et al., 2023). These developments highlight the importance of raising awareness about the environmental consequences of digitalization, enabling a more informed and proactive response to its negative effects.

The sustainability implications of digitalization are complex, as the same technologies that promise efficiency also carry environmental costs. This paradox of digitalization has been described by van der Vorst et al. (2023). On one side, digital technologies can promote sustainability through smarter energy use, reduced material consumption, and improved product lifecycle management (van der Vorst et al., 2023). On the other side, their increasing deployment generates significant greenhouse gas emissions, primarily due to the energy demand of data centres, cloud infrastructure and digital services (van der Vorst et al., 2023). The problematic aspect lies in the tendency of many organizations to emphasize the benefits of digitalization, while paying insufficient attention to its environmental costs.

To address this issue, it is crucial to examine how companies understand and respond to the environmental impact of their digital operations. A digital footprint refers to the ecological consequences of digital activities such as data storage, cloud computing, and online communication, including the energy usage and carbon emissions they generate (Sharma & Dash, 2022). These impacts arise from the electricity required to power servers, networks, and user devices, contributing to a sector that now accounts for approximately 10% of global electricity consumption (Balta et al., 2021; Oo et al., 2023; Wook et al., 2019). Yet, because digital emissions are largely invisible, they are rarely prioritized in sustainability strategies. While existing research primarily focuses on technical measurement, such as energy consumption and emission data (Guenther et al., 2023), far less attention has been paid to how these impacts are communicated and understood within organizations (Khan and Ximei, 2022; Martínez-Acosta et al., 2023; Yi et al., 2019). This opens up the need for strategic communication approaches to help translate abstract environmental data into concrete corporate awareness.

A better understanding of how communication shapes corporate awareness requires insight into the way information is cognitively processed and framed. Framing theory, originally developed by Goffman (1981), explains how individuals organize and interpret information through cognitive

structures known as ‘frames’. These frames help people to make sense of complex issues and guide their response to information. In the context of sustainability communication, framing refers to the way information is presented, either by highlighting positive outcomes (positive framing) or by emphasizing potential negative consequences (negative framing) (Kotlyar & Karakowsky, 2007; Tang & Chooi, 2021). Understanding these framing mechanisms is crucial for analysing how companies perceive and respond to messages about their digital environmental impact.

Building on insights from framing theory, it is valuable to consider how these strategies have been applied in practice, particularly in other domains, particularly in domains where their effectiveness has been extensively studied. Framing strategies have been successfully applied in health communication to influence public attitudes and behaviours (Bonnetterre et al., 2024; Duthie et al., 2024; Homar & Cvelbar, 2021), it is important to recognize that the context of health communication differs fundamentally from that of digital sustainability. In health communication, framing techniques are primarily used in non-profit or governmental settings, where the main goal is behavioural change in favour of public health (Homar & Cvelbar, 2021). In contrast, framing strategies in the context of digital sustainability target organizations operating in highly competitive and profit-driven market (Gorton et al., 2022). This distinction highlights the importance of context-specific framing approaches when aiming to raise corporate awareness about environmental issues in the digital domain.

Given these contextual differences, it is likely that organizations interpret and respond to framing messages in ways that differ from individual audiences in health communication. A crucial factor that can explain these different responses is corporate culture. Corporate culture refers to the shared values, norms, and beliefs within an organization (Schein, 1990) and plays a decisive role in shaping how companies perceive and respond to communication strategies. Therefore, this study not only investigates the direct effects of positive and negative framing on corporate awareness of digital footprints but also examines how corporate culture moderates this relationship.

Addressing this gap in contextual domains requires examining how different communication strategies, particularly positive and negative framing, can influence corporate awareness and encourage more responsible digital behaviour. The research question guiding this study is: *“How do positive and negative framing strategies influence corporate awareness of digital footprints, and how is this relationship moderated by corporate culture?”*

The findings of this study are expected to contribute to both theoretical and practical applications by providing insights into how framing strategies can effectively enhance corporate awareness of digital footprints and promote sustainable digital practices. From a theoretical perspective, the research expands the framing literature from Goffman (1981) by applying it to the underexplored context of digital sustainability within corporate environments, thereby bridging a gap between communication

theory and environmental management. Practically, the study aims to offer actionable recommendations for organizations striving to integrate sustainability practices into their operations due to communication strategies. By demonstrating how specific framing approaches, positive or negative, can influence organizational awareness and potentially shift behavioural norms, the research provides guidance for companies seeking to stimulate environmentally responsible digital practices, both internally and in dialogue with consumers.

This thesis is structured as follows. Chapter 2 presents the theoretical framework, introducing the concept of digital footprints and discussing how framing theory and corporate culture provide a lens for understanding communication strategies in a corporate sustainability context. Chapter 3 outlines the qualitative research design, including the interview methodology, data collection and coding procedures. Chapter 4 presents the empirical findings, focusing on how digital agencies respond to positive and negative framing strategies, and how corporate culture moderates these responses. Finally, Chapter 5 reflects on the implications of these findings, discusses limitations, and offers directions for future research and practical recommendations.

2. Literature review

2.1. Framing Theory perspective

Understanding how people interpret information starts with examining the mental structures they rely on. Framing theory, originally developed by Erving Goffman (1981), is a sociological theory that explains how individuals organize and interpret information through frames. Frames are cognitive structures or mental schemas that people use to categorize and make sense of their experiences. According to Goffman, these frames help individuals define situations and guide their responses within different contexts. The theory suggests that the way information is framed – either positively or negatively – affects how individuals perceive and respond to that information (Goffman, 1981). This foundational view highlights framing as a socially situated process of meaning-making that guides human perception and behaviour.

These insights into individual perception have also been extended to organizational settings. Nutt (1998) expanded upon Goffman's ideas by examining how framing influences strategic decision-making. Nutt emphasized that framing is the first step in decision-making processes, where claims made by stakeholders initiate action and influence the search for solutions. This perspective is relevant to this research, as companies act as decision-makers who use framing as a deliberate communication strategy to effectively present information about digital footprints, ultimately prompting consumers to become more aware and encouraging them to change their behaviour. In this sense, framing operates not only on an individual level but also as a purposeful tool within organizational communication.

To better position this study, it is important to distinguish framing theory from related approaches. Although framing theory and prospect theory (Kahneman & Tversky, 1979) may appear related due to their shared focus on the influence of message presentation, this study deliberately adopts a framing theory perspective. Where prospect theory primarily explains individual decision-making under risk based on loss aversion, framing theory focuses on the communicative process through which information is structured and interpreted within a specific context (Goffman, 1981). Since this research aims to explore how strategic communication shapes corporate awareness of digital footprints, rather than individual risk-based choices, framing theory provides a more suitable and context-sensitive framework. This choice ensures that the theoretical lens remains aligned with the organizational and communicative focus of the research.

2.2. From Invisible to Visible: Digital Footprint Tangibility

Applying framing theory to the awareness of digital footprints and their environmental impact, we can argue that a clear and recognizable frame is essential to make this complex issue understandable and relevant to the general public. Goffman (1981) suggests that people do not construct their reality from scratch in every situation but instead rely on existing frames to make sense of their experiences. Without a clear frame regarding the ecological consequences of digital activities – such as data consumption, streaming, or cloud storage – people are likely to underestimate or completely overlook this impact (Dumitra et al., 2024). This is because existing societal frames often associate technology convenience, innovation, and intangible processes, making the physical and environmental costs invisible (Guenther et al., 2023). Establishing alternative frames is therefore essential to reveal the hidden ecological dimension of digital behaviour.

By creating explicit frames – for example, presenting digital footprints as a tangible source of CO₂ emissions – it becomes easier for people to connect digital consumption with environmental issues. Those frames can challenge existing perceptions and encourage individuals to adopt more conscious digital behaviours, such as reducing unnecessary data storage, streaming in lower resolutions, or managing emails more efficiently.

2.3. Positive vs. Negative Framing

When aiming to influence behaviour, the way how information is framed can make all the difference. One of the most effective framing strategies to encourage companies to act in a desired way (Kühberger, 1995) is the use of positive or negative framing (Florence et al., 2022). Positive framing strategies focus on presenting information in a way that highlights potential benefits, gains, or positive outcomes rather than losses or risks (Carnevale, 2007). This approach offers several key benefits in influencing corporate behaviour and decision-making. First, positive framing increases engagement and compliance by encouraging companies to respond more favourably to messages that emphasize potential gains (Rosenblatt et al., 2018). For example, organizations are more likely to adopt

sustainable practices when these actions are framed as opportunities to improve efficiency, enhance brand reputation, or reduce long-term costs rather than as obligations to avoid environmental harm. Additionally, positive framing appeals to corporate values and fosters motivation (Tang & Chooi, 2021). Messages that emphasize further benefits, such as meeting stakeholder expectations, can inspire companies to take proactive measures. For instance, highlighting how reducing digital footprints can lead to cost savings and improved corporate social responsibility (CSR) can motivate businesses to adopt greener digital policies. This long-lasting impact is another advantage of positive framing (Rosenblatt et al., 2018). By focusing on the long-term benefits of sustainable actions – such as regulatory compliance, improved public perceptions, and future-proofing operations – companies are more likely to maintain and expand their commitment to environmentally responsible practices (Cockburn et al., 2020). This demonstrates how aligning sustainable behaviour with business incentives can strengthen both initial engagement and long-term commitment.

Not all messages aim to inspire through optimism. The opposite, negative framing, presents information by emphasizing potential losses, risks, or negative consequences rather than gains or benefits (Kotlyar & Karakowsky, 2007). This approach can be a powerful tool for influencing behaviour by highlighting what could go wrong if specific actions are not taken (Tang & Chooi, 2021). One key benefit is that negative framing increases urgency and compliance (Kotlyar & Karakowsky, 2007). When companies are confronted with the risks of inaction – such as reputation damage or regulatory penalties – they are more likely to act quickly to avoid these threats. Another significant effect of negative framing is its ability to generate a strong emotional impact (Breuer et al., 2023). Messages that highlight negative outcomes often evoke emotions such as fear, anxiety, or concern, which can motivate immediate action (Rosenblatt et al., 2018). For instance, emphasizing the environmental harm caused by excessive digital consumption can pressure companies to adopt more sustainable digital policies to prevent public backlash. Additionally, negative framing encourages risk-averse decision-making (Goffman, 1981). According to prospect theory (Kahneman & Tversky, 1979), individuals and organizations are generally more motivated to avoid losses than to achieve gains. By focusing on the negative consequences of inaction, companies become more cautious and are more likely to adopt new practices to prevent future harm (Homar & Cvelbar, 2021). However, a potential downside of negative framing is that it often leads to short-term behavioural change rather than fostering long-term commitment (Tang & Chooi, 2021). Companies may implement quick solutions to avoid immediate risks but fail to adopt lasting, structural changes once the perceived threat diminishes.

2.4. Corporate Culture

The way organizations respond to messaging is not shaped by framing alone. Corporate culture plays a pivotal role in determining how framing strategies, whether positive or negative, influence corporate awareness of digital footprints. As defined by Schein (1990), corporate culture refers to the shared values, beliefs, and practices that characterize an organization. It shapes how companies perceive,

interpret, and respond to information, influencing the effectiveness of framing strategies in raising awareness about the environmental impact of digital activities.

Corporate culture serves as a powerful moderator due to several reasons. Firstly, the alignment between framing messages and a company's strategic goals significantly impact how these messages are received. Companies with a strong sustainability-oriented culture are more likely to respond positively to framing strategies highlighting environmental benefits, such as efficiency improvements or enhanced CSR (Miska et al., 2017). Conversely, companies primarily driven by financial performance or risk aversion may respond more effectively to negative framing that emphasized regulatory risks, potential reputation damage, or financial losses (Miska et al., 2017). In this way, corporate culture acts as a filter through which the persuasive power of framing is either amplified or diminished.

Secondly, the way how an organization deals with change can also shape its response to framed messages. The openness of a company to change determines how framing messages are processed (Gorton et al., 2022). Innovative and adaptive cultures are more receptive to positive framing (Chen et al., 1997), which emphasized growth opportunities and long-term benefits of reducing their digital footprint. In contrast, risk-averse or traditional cultures may react more strongly to negative framing due to their focus on minimizing risks and preventing adverse outcomes (Chen et al., 1997). This illustrates how internal attitudes toward innovation and risk directly influence which framing strategy is most persuasive.

Furthermore, cultural alignment does not just affect how companies act, but also how they perceive and trust information. Perceived credibility and message reception are influenced by corporate culture (Gorton et al., 2022). Messages that align well with a company's existing culture are perceived as more credible and relevant (Maheswaran & Meyers-Levy, 1990), thereby enhancing awareness. For instance, environmentally conscious companies are more likely to perceive messages about digital footprint as reduction as consistent with their broader CSR objectives, making them more inclined to adopt suggested changes.

The moderating effect of corporate culture can be further understood through several theoretical frameworks. Schein's organizational culture theory (2010) suggests that shared values and assumptions within an organization influence how new information is interpreted and acted upon. Institutional theory (DiMaggio & Powell, 1983) highlights how organizations are influenced by norms and pressures within their institutional environment. In this context, corporate culture acts as a lens through which these pressures are interpreted, determining whether framing strategies resonate with the company's established values.

2.5. Corporate Awareness

Understanding what drives sustainable business practices starts with recognizing the role of awareness. Corporate awareness refers to the extent to which companies are aware of their environmental impact (Liu & Cao, 2024), particularly their digital footprints in this case, and how this awareness influences their strategic decisions and practices (Van Gaal et al., 2012). It encompasses organization’s recognition of its responsibilities regarding environmental sustainability and its ability to understand and address the ecological consequences of its digital activities. Corporate awareness involves not only acknowledging the environmental impact of business operations but also integrating this knowledge into decision-making processes, policies, and overall corporate strategy (Key & Popkin, 1998). Building corporate awareness is essential for fostering more sustainable business practices and enhancing an organization’s reputation and credibility in an increasingly environmentally conscious market (Kitsios et al., 2020). As such, corporate awareness forms a crucial foundation for aligning environmental responsibility with long-term strategic goals. Based on the literature, corporate awareness can be fostered through framing strategies as illustrated in the model below.

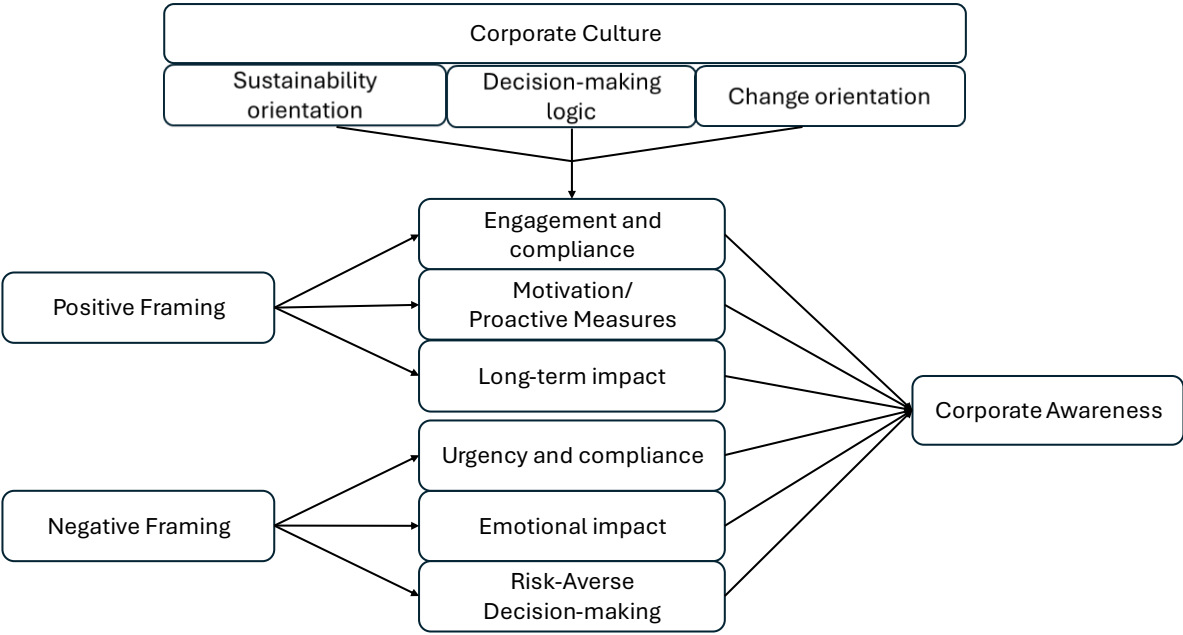


Figure 1: Visual representation of the literature showing how Framing Strategies influence Corporate Awareness, moderated by elements of Corporate Culture

This visual representation of the literature serves as the theoretical foundation for the current research and will be empirically explored in the remainder of the thesis. Different framing styles can activate different kinds of organizational response. As established in Goffman’s (1981) framing theory, the way information is presented – either through a positive or negative frame – affects how it is perceived and interpreted. Drawing on insights from strategic communication research (e.g. Florence et al., 2022; Tang & Chooi, 2021), the model suggests that positive framing is expected to lead to *engagement and compliance*, *motivation toward proactive measures*, and *long-term impact*. Positive frames emphasize

benefits, opportunities, and reputational gains, which are more likely to promote enduring behavioural change, particularly in organizations focused on innovation and cooperation.

But not every message motivates through opportunity, some do so through warning. Negative framing is theorized to generate *urgency and compliance, emotional response, and risk-averse decision-making* (Breuer et al., 2023; Kotlyar & Karakowsky, 2007). By highlighting the potential risks and consequences of inaction, negative framing can trigger short-term behavioural responses driven by fear, pressure, or threat. While such responses can raise immediate awareness, they are less likely to result in structural or long-term change.

However, framing effects do not occur in isolation. As discussed in section 2.4., corporate culture plays a critical moderating role in determining how organizations respond to framed messages. The model illustrates that cultural dimension such as *sustainability orientation, decision-making logic, and change orientation* shape how framing is received, whether it is perceived as credible, relevant, and motivating (Miska et al., 2017; Schein, 1990). Organizations with a strong ethical or sustainability-oriented culture are generally more responsive to positively framed messages, while more pragmatic or risk-averse cultures may react more strongly to negatively framed warnings.

Finally, the model positions corporate awareness of digital footprints as the dependent variable. As outlined in 2.5., this refers to an organization's recognition of its digital environmental impact and its capacity to translate this awareness into strategic reflection and behavioural change.

3. Method

3.1. Research design

This study employs a qualitative research approach to explore how framing strategies influence corporate awareness of digital footprints. A qualitative approach is particularly appropriate for this research as it allows for an in-depth understanding of corporate perceptions, interpretations, and responses to strategic communication (Bleijenbergh, 2015). Since framing is a communicative and cognitive process that shapes how information is processed and acted upon (Goffman, 1981), it is best studied through methods that capture meaning, context and nuance (Vennix, 2019). A qualitative approach facilitates a deeper investigation into how corporate stakeholders construct meaning around digital footprints, which a quantitative approach, focused on measuring predefined variables, might overlook (Bleijenbergh, 2015). This approach therefore aligns closely with the study's aim to uncover the underlying mechanisms through which framing affects corporate environmental awareness.

Additionally, this study follows an exploratory research strategy because corporate awareness of digital footprints and the role of framing in shaping this awareness remain underexplored in existing literature. Exploratory research is appropriate when a topic has not yet been systematically analysed within a specific context (Bingham, 2023). While framing strategies have been extensively studied in

health communication (e.g. smoking cessation, vaccination campaigns) (Bonneterre et al., 2024; Duthie et al., 2024; Homar & Cvelbar, 2021), their application to corporate sustainability awareness is less developed regarding their different cultures. Therefore, this study explores how framing techniques used in health communication may be leveraged to enhance corporate awareness of digital footprints, bridging insights between these two fields.

This research follows a deductive reasoning approach, as it applies established framing theories from health communication to a new context, namely corporate sustainability awareness. Deductive research starts with existing theoretical concepts and examines their applicability within a different empirical setting (Bingham, 2023). By exploring whether positive or negative framing strategies influence corporate awareness of digital footprints in similar ways as they do in health communication, this study assesses the transferability of these framing techniques across domains (Goffman, 1981; Maheswaran & Meyers-Levy, 1990). This allows the study to build on established theoretical foundations while exploring their relevance in a novel organizational context.

By integrating a qualitative, exploratory, and deductive research design, this study aligns with the post-positivist research paradigm, which acknowledges that while objective patterns in communication strategies may exist, they are still shaped by contextual corporate dynamics (Ryan, 2006). This paradigm offers the flexibility to explore nuanced meaning while still maintaining a structured, theory-informed analytical lens.

To support the coherence and rigor of the research design, an operationalization table was constructed to ensure that the theoretical framework could be systematically translated into a researchable format. Since this study adopts a qualitative, exploratory, and deductive approach, it was essential to clearly map how central concept such as framing, corporate awareness and corporate culture are conceptually connected and analytically distinguishable. The table reflects these design choices by outlining how theoretical constructs were broken down into guiding dimensions for empirical exploration. In doing so, the operationalization table functions as a blueprint that aligns the theoretical orientation of the study with its empirical strategy. The table is presented below:

Concept	Dimension	Indicator	Measurement Method
Framing strategies	Positive framing	Emphasis on benefits of reducing digital footprint	Presentation of positively framed statements in interviews
	Negative framing	Emphasis on risks of not addressing digital footprint	Presentation of negatively framed statements in interviews
Corporate Awareness	Recognition of digital footprint impact	Awareness of digital energy consumption & CO2 emissions	Interviews responses on knowledge & perceived relevance
	Perceived responsibility	Willingness to take action on reducing footprint	Self-reported intentions & past actions in interviews
	Awareness of framing influence	Perception of how message framing affects their views	Interview responses on framing effect
Corporate Culture	Sustainability orientation	Integration of sustainability into company strategy	Interview questions on sustainability policies
	Decisions-making approach	Whether decisions are influenced by financial, ethical, or regulatory concerns	Interview responses on decision rationale
	Innovation and adaptability	Willingness to adopt new sustainability practices	Self-reported openness to new policies in interviews
Response to Framing	Acceptance or rejection of message	Level of agreement with framed statements	Reaction to framing in interviews (qualitative coding)
	Emotional or rational processing	Emotional vs. logical arguments in responses	Qualitative coding of interview transcripts
	Intended behavioural response	Plans to change digital sustainability practices	Self-reported future actions in interviews

Table 1: Operationalization table

3.2. Data collection

Understanding the research context begins with recognizing the role of the researcher within it. As a researcher, I participate in *Lifeport@ Innovatiehub Circulair 2025*, an innovation hub focused on fostering circular entrepreneurship and sustainability (Engelsman, 2025). This hub serves as a collaborative platform where businesses, policymakers, and academic institutions come together to exchange knowledge and develop innovative solutions for sustainability challenges. One of the participating companies within the innovation hub is MonkeyVision, a firm actively engaged with digital sustainability. This setting offers a relevant starting point for examining how organizations engage with digital sustainability in practice.

To assess corporate awareness of digital sustainability in response to the applied framing strategies, this study focuses on digital agencies. As specialist firms that design, develop, and optimize digital environments, digital agencies hold a central position in the creation and maintenance of online infrastructures. Their work requires a constant awareness of technological trends, efficiency, and increasingly also of environmental impacts. Given their expertise and strategic advisory role towards client organizations, digital agencies are uniquely positioned to both shape and reflect emerging sustainability norms in the digital domain. This makes them highly relevant respondents for examining how framing strategies influence awareness and prioritization of digital footprints within corporate decision-making.

A selection of six digital agencies has been made to participate through qualitative interviews, consisting of 'Webreact', 'KINEKT', 'Go2People', 'TrueShift', 'BlueFieldAgency' and 'Ibizz', based on convenience sampling, as these were the only agencies available and willing to participate (Vennix, 2019), while others declined due to a lack of engagement with the topic of digital sustainability. Within these organizations, interviews will be conducted with key decision-makers involved in sustainability, digital strategy, or project management. Relevant roles include creative directors, project leaders, sustainability coordinators, and senior management members. These individuals possess the strategic oversight and operational influence needed to provide in-depth insights into how digital sustainability is perceived, communicated, and implemented within their organization.

In addition to the six digital agencies, an expert interview was conducted with Bernard van Gastel, Assistant Professor in Sustainable Digitalization at Radboud University. Van Gastel was also a guest speaker at the *Lifeport@ Innovatiehub Circulair 2025*, where he shared insights on how organizations can translate abstract sustainability goals into concrete digital practices. His academic perspective served as a valuable reference point to compare, contextualize, and deepen the interpretations of the views expressed by the participating digital agencies.

The interviews conducted in this study will follow a semi-structured format (see Appendix: A, based on Table 1), as this approach allows for a balance between comparability and flexibility in data

collection (Busetto et al., 2020). The core structure of the interviews will be predetermined by presenting participants with both positively and negatively framed statements regarding digital footprints (see Appendix: B). These statements are grounded in data from the *Assessment of the energy footprint of digital actions and services* (European Commission, 2023) and further quantified using Ecochain's online footprint calculator (Ecochain LCA Software, 2025), in order to translate abstract environmental impacts into tangible equivalents. This ensures consistency across interviews, enabling a systematic examination of how corporate actors respond to different framing strategies. However, the remainder of the interview will remain relatively open-ended to allow for in-depth exploration of contextual factors, particularly the role of corporate culture in shaping these responses.

To enhance the validity and depth of this research, triangulation is achieved through firstly the multi-stakeholder environment of Lifeport@ Innovatiehub Circulair 2025. This embedded position provides rich contextual insight into real-world sustainability practices and communication dynamics. Secondly, semi-structured interviews with digital agencies offer concrete, practice-based perspectives on how framing strategies are received and enacted within professional settings. Thirdly, an academic expert in the field of digital sustainability contributes a theoretical and critical viewpoint, helping to interpret findings with a broader scholarly context.

3.3. Data analysis

Once the data is collected, a systematic approach is required to uncover meaningful patterns. The recorded interviews will be transcribed and systematically analysed using a three-step coding process: open coding, axial coding, and selective coding (Williams & Moser, 2019). This grounded theory-inspired approach ensures a structured yet flexible analysis, allowing for the identification of emerging themes while maintaining alignment with the study's theoretical framework (Williams & Moser, 2019). This method enables a rigorous interpretation of the interview data while remaining sensitive to contextual nuance.

The coding process begins with the most exploratory and open-ended phase. Open coding will be conducted, during which the transcripts will be reviewed line by line to identify key concepts, patterns, and recurring themes (Bingham, 2023). This inductive phase allows for the fragmentation of data into meaningful units without imposing predefined categories (Williams & Moser, 2019). Given the exploratory nature of this study, open coding is crucial for capturing a wide range of corporate perceptions on digital footprint awareness and framing strategies.

After identifying initial concepts, the next step involves organizing them into meaningful structures. Axial coding will be applied to establish relationships between the initial open codes by grouping them into broader thematic categories (Williams & Moser, 2019). This phase enables the identification of connections between framing strategies, corporate culture, and sustainability awareness, aligning with the study's focus on corporate decision-making processes. Axial coding will help refine how

different framing statements (positive vs. negative) are received across various corporate contexts, providing deeper insights into framing effectiveness.

The final stage of the coding process brings the analysis together into a focused, theory-driven account. Selective coding will be used to integrate the core categories into a coherent narrative, ensuring that the analysis directly addresses the research question (Bingham, 2023). In this phase, the most relevant categories will be synthesized into a theoretical model explaining how framing influences corporate awareness of digital footprints. Selective coding strengthens the analytical rigor by ensuring that findings are consistently linked to the theoretical background of framing theory and corporate sustainability (Williams & Moser, 2019). This step ensures that the resulting insights are both conceptually grounded and practically meaningful within the study's framework.

3.4. Research ethics

Ethical considerations are a fundamental component of responsible qualitative research. To ensure research integrity, transparency, and participant privacy, this study adheres to the ethical guidelines outlined in the 'Nederlandse Gedragscode Wetenschapsbeoefening' (Radboud Universiteit, 2024). All participants will be informed in advance about the purpose of the study, their voluntary participation, and their right to withdraw at any time without consequences. Informed consent will be obtained prior to each interview.

All interviews will be audio recorded with explicit consent from the participants. The recordings will solely be used for the purpose of transcription and data analysis. To guarantee secure data storage and privacy, all interview recordings and associated research data will be stored in the RIS for Students environment provided by Radboud University. This is a closed and secure research data archive, accessible only to the researcher and the supervisor. This whole approach safeguards both scientific integrity and participant confidentiality throughout the research process.

4. Results

4.1. The Effect of Framing Strategies on Awareness

4.1.1. Responses to Positive Framing

Across all interview's, positively framed messages were consistently perceived as more motivating, actionable and engaging than negatively framed ones. Instead of appealing to fear or urgency, these messages emphasized opportunity, cooperation and long-term benefits. This tone resonated strongly with how digital agencies communicate and operate, particularly when sustainability was presented as both achievable and strategically relevant.

The first positive frame stated: *“By designing and hosting more efficient websites, a company can save up to 5000 kilograms of CO2 annually, equivalent to the absorption capacity of more than 250 mature trees. This not only contributes directly to the climate but also strengthens the company's sustainable*

positioning” (Ecochain LCA Software, 2025; European Commission, 2023). Respondents described this message as visual, tangible and energizing. At Webreact, the manager of development team responded enthusiastically: *“It makes me think, cool, we can actually work on this”* (N. Ringersma, personal communication, 30 April 2025). He explained that the message appealed not just because of the environmental facts, but because it introduced an additional sense of purpose: *“It makes it more fun, because you get a sort of second goal. Not only financial, but also sustainable.”* He further added that the tone of the message encouraged cooperation rather than blame: *“It calls for collaboration. It feels like: you need our help, and we will do this together”* (N. Ringersma, personal communication, 30 April 2025).

The second frame focused on business relevance and competitive advantage: *“By systematically cleaning up unused files from cloud storage, companies can save thousands of gigabytes of data traffic annually, resulting in a CO2 reduction comparable to 25 roundtrip flights from Amsterdam to Barcelona. This makes digital archiving not only more efficient but also more sustainable”* (Ecochain LCA Software, 2025; European Commission, 2024). This message was considered concrete and operationally relevant. At KINEKT, the creative director acknowledged that such practices are already part of their optimisation logic: *“We optimise websites with a clear goal, and energy savings often come naturally as a byproduct”* (D. Bogers, personal communication, 2 May 2025). By linking efficiency to sustainability, the frame was seen as confirming and reinforcing rather than imposing. At Ibizz, the CTO agreed that the frame offered a relatable and achievable action perspective: *“We try to communicate in a fun and engaging way, and this tone really fits that. You want to keep it light and positive”* (M. van Well, personal communication, 16 May 2025).

Several respondents further stressed how positive messaging aligns with their entrepreneurial mindset. According to KINEKT, *“entrepreneurs are eternal optimists, so positive framing works better for them”* (D. Bogers, personal communication, 2 May 2025). The idea that possibilities, rather than risks, trigger action was echoed by CEO of Go2People: *“Positive framing gives perspective and makes you want to act”* (W. Feijen, personal communication, 7 May 2025). He added: *“As an entrepreneur, you always want a positive approach. What are we going to do together, and how are we going to achieve it?”* This notion of shared progress, rather than imposed responsibility, emerged as a recurring theme.

Beyond psychological appeal, the framing’s operational realism was also appreciated. For some, it validated ongoing efforts. At BlueFieldAgency, the business manager explained that such forward looking frames strengthen internal and external motivation: *“The more positively we position ourselves as a company, the more positively that reflects back on our clients”* (K. Merckx, personal communication, 14 May 2025). At Ibizz, the tone was equally important: *“Begin from the positive side. Then people are more likely to come along. That is the image you want to create”* (M. van Well, personal communication, 16 May 2025).

Lastly, the ability of positive framing to evoke shared values and long-term orientation was highlighted by TrueShift. Their designer emphasized that effective messaging should begin with a future perspective: “You are better off starting with what kind of shared future I envision. Which values and norms I want to underline, such as a safe planet or a future for younger generations” (D. Efdé, personal communication, 12 May 2025). Rather than dictating behaviour, the message became an invitation to contribute meaningfully.

In summary, both positive frames were broadly appreciated for their clarity, tone and relevance. Whether visualising environmental impact or linking sustainability to efficiency, the frames encouraged constructive engagement by offering practical and reputational value. Positive framing was not only more acceptable but also more aligned with the cultural and strategic logic of digital agencies, making it an effective tool to raise awareness and stimulate action around digital sustainability.

4.1.2. Responses to Negative Framing

In contrast to the activating and engaging tone of positive framing, the negatively framed messages triggered a broader spectrum of reactions, ranging from concern and reflection to scepticism and resistance. Respondents generally recognised the urgency conveyed in the messages, but also noted how the tone and structure of the framing shaped their reception. While the problem awareness was often acknowledged, the style of delivery influenced whether the message was embraced, questioned or disregarded.

The first negative frame stated: *“Unoptimized websites can cause more than 5000 kilograms of unnecessary CO2 emissions per year, equivalent to 20,000 kilometres of car travel. Every heavy page counts, and this impact remains largely under the radar for most companies”* (Ecochain LCA Software, 2025; European Commission, 2024). This message was perceived by several respondents as confrontational in tone. At Webreact, the development lead explained: *“It feels like finger pointing. Like blaming us for something we didn’t know about”* (N. Ringersma, personal communication, 30 April 2025). A similar interpretation was shared at BlueFieldAgency, where the business manager remarked: *“It’s not necessarily wrong, but it puts people off. It almost feels accusing”* (K. Merckx, personal communication, 14 May 2025). Nonetheless, others acknowledge that the message effectively created urgency, particularly through the use of concrete numbers. As the CEO of Go2People stated: *“The numbers are impressive. They do make you pause for a moment”* (W. Feijen, personal communication, 7 May 2025).

The second frame addressed the invisibility of digital pollution: *“Unused files often remain on servers for years, causing significant emissions unnoticed, annually, this results in CO2 emissions worldwide comparable to those of the aviation sector in a medium-sized country”* (Ecochain LCA Software, 2025; European Commission, 2024). This framing elicited more polarised responses. At Ibizz, the

CTO considered it thought-provoking: *“It makes you stop and think. Because it’s true, we don’t see it, so we forget it”* (M. van Well, personal communication, 16 May 2025). Others were more sceptical. At KINEKT, the creative director noted: *“By blaming professionals, you cannot convince them”* (D. Bogers, personal communication, 2 May 2025). Similarly, the designer at TrueShift warned that moralising language can provoke defensiveness: *“If you say, ‘this is your fault’, the first thing people will do is push back or deny it”* (D. Efdé, personal communication, 12 May 2025).

Across interviews, a recurring theme was the importance of maintaining dialogue and connection in sustainability communication. Some respondents felt that negatively framed messages, particularly when using accusatory language, could close off conversation rather than open it. At Go2People, the CEO noted: *“You can’t start a conversation with accusation. That shuts people down”* (W. Feijen, personal communication, 7 May 2025). Instead, respondents advocated for messaging that invites engagement and reflection without prescribing guilt. The business manager at BlueFieldAgency summarised this sentiment as follows: *“If you want to convince, don’t attack. Invite”* (K. Merckx, personal communication, 14 May 2025).

Still, several respondents acknowledged that the urgency in these messages had the potential to raise awareness, particularly when audiences were not yet familiar with the environmental impact of digital behaviour. The CTO at Ibizz reflected: *“It can work as a wake-up call, but not if it becomes the only tone you use”* (M. van Well, personal communication, 16 May 2025). This balance between creating impact and maintaining openness was recurring consideration. Respondents noted that strong wording may provoke initial attention but must be followed by constructive communication to sustain engagement.

In summary, the responses to negative framing were multifaceted. Although the frames were often recognised as factually grounded and timely, their perceived tone strongly influenced their effect. While they succeeded in emphasising urgency and making invisible issues more visible, their direct or moralising language sometimes conflicted with the constructive and partnership-based communication style preferred by digital agencies. As such, their persuasive value depended not solely on message content, but on whether the message created space for shared understanding and dialogue.

4.2. Level of Corporate Awareness

4.2.1 Awareness and Understanding of Digital Footprint Impact

Although all participating agencies operate in a digital-first environment, their awareness of the environmental consequences of digital activities remains limited and fragmented. The concept of a digital footprint was often described as abstract, with many struggling to define what it entails or how it translates into their daily work. This vagueness appears to constrain proactive engagement and hampers the integration of sustainability considerations into digital decision-making.

Within the development team at Webreact, the topic is acknowledged but not yet integrated into structured action. The notion of digital sustainability is seen as multifaceted, yet still difficult to operationalize: *“Digital sustainability, to me, has two sides: what we do as a company and whether we consciously choose our suppliers”* (N. Ringersma, personal communication, 30 April 2025). The perceived intangibility of the topic was emphasized further: *“Because it’s so unclear, we haven’t really done anything with it yet. I think that’s the reason. It’s not unwillingness”* (N. Ringersma, personal communication, 30 April 2025).

At KINEKT, this uncertainty was echoed. While the organization is involved in digital production on a daily basis, the topic of sustainability rarely surfaces, either internally or in client conversations. As one team member reflected: *“I never really think about it. The term digital sustainability doesn’t really mean much to me”* (D. Bogers, personal communication, 2 May 2025). The same respondent noted that clients are similarly unaware: *“Not a single client is concerned with their ecological impact through the internet”* (D. Bogers, personal communication, 2 May 2025). The technical complexity of the topic was cited as a barrier to practical engagement: *“It gets so complex that you really lose sight of how sustainable your digital usage actually is”* (D. Bogers, personal communication, 2 May 2025).

A more structured internal approach was described at Go2People. While awareness appears stronger than elsewhere, this is largely limited to internal processes. Emissions are monitored, and results are communicated within the organization. Still, external engagement is lacking: *“We are very aware internally, but externally we notice there is barely any attention or awareness. Especially not from our clients”* (W. Feijen, personal communication, 7 May 2025). To enhance visibility, one suggestion was to provide a concrete tool: *“I think it would be good for us, and definitely for our clients, to have a kind of carbon footprint meter to make the impact more visible”* (W. Feijen, personal communication, 7 May, 2025). Reflecting more broadly on this need for measurability, a university lecture in Sustainable Digitalization at Radboud University emphasized that waiting for perfect data is unnecessary: *“You’ll never be able to fully calculate the exact impact, but that shouldn’t stop you. Just start doing something”* (B. van Gastel, personal communication, 3 June 2025).

Responsibility was another theme that emerged. A designer at TrueShift highlighted the importance of awareness across all layers of society. He reflected: *“I didn’t know that a poorly optimized website could cause so much harm. I never really realized that”* (D. Efdé, personal communication, 12 May 2025). The conversation triggered internal reflection: *“Talking about this makes me aware that this should be on the agenda. We should also think about what we can do ourselves and how we can help our clients become more aware and take action”* (D. Efdé, personal communication, 12 May 2025). The response illustrates how digital sustainability, once made explicit, can quickly spark a sense of responsibility and agency. However, it also reveals that such awareness often depends on individual encounters rather than being embedded in organizational culture or processes.

Digital operations seem to foster more awareness in some teams. An account lead at BlueFieldAgency described how the topic was increasingly present internally, even though it remained largely absent in client conversations: *“No one has ever asked me what we do with our data or our cloud storage. Clients are just happy that we’re getting things done for them”* (K. Merckx, personal communication, 14 May 2025). This quote highlights the gap between internal ambition and external demand. While certain individuals within the agency are clearly becoming more conscious of their digital impact, this awareness appears not yet formalised or incentivised at the client level. Without external triggers or requests, the topic remains easily deprioritised.

In smaller agencies, the concept of digital sustainability often remains unfamiliar. A senior technical specialist at Ibizz noted: *“It’s a completely new term. Really new in the organization,”* and continued: *“I wasn’t really involved with it, to be honest”* (M. van Well, personal communication, 16 May 2025). The lack of familiarity was not presented with resistance, but rather with a sense of distance and limited relevance. There appears to be no internal framework or external pressure encouraging deeper engagement. As such, sustainability may be seen as a secondary concern, important in principle but easily overshadowed by immediate project demands and client expectations.

Taken together, these findings reveal that digital footprint awareness is still in its infancy across the sector. While there is a growing willingness to reflect on the topic, many professionals experience it as too vague, too complex, or not sufficiently prioritized, either internally or by clients. Clarifying the terminology, increasing visibility, and embedding the topic in practical workflows could help bridge the gap between conceptual awareness and operational engagement.

4.2.2. Self-Reflection and Willingness to Act

While awareness of the digital footprints is still developing, several agencies expressed an emerging willingness to translate that awareness into action. For some, this intention is rooted in a sense of responsibility, while for others it is more pragmatic or client driven. Respondents across multiple organizations noted that although digital sustainability is not yet institutionalised, the desire to “do something” is increasingly present. The designer at TrueShift confirmed this readiness: *“We’re definitely open to change, but we need a bit more structure. Otherwise, it stays just good intentions”* (D. Efdé, personal communication, 12 May 2025). At Webreact, the topic was not yet fully developed, but team members suggested that awareness could evolve into concrete steps: *“I do think that if people become more aware, they’ll also feel a stronger urgency to take action the intention is already there, but it just needs direction”* (N. Ringersma, personal communication, 30 April 2025). These responses indicate that motivation is not the limiting factor, rather, it is a lack of structure or support that delays concrete action.

This notion that action follows awareness was echoed by others, yet not without hesitations. At Go2People, the readiness to act was described as present but dependent on concrete frameworks:

“We’re willing to work on it, but we’d need guidance, a concrete roadmap” (W. Feijen, personal communication, 7 May 2025). The creative director at KINEKT added a more sceptical note, observing that while interest may be genuine, it is often postponed: *“People like to talk about it, but when it comes to actual implementation, it often gets pushed aside”* (D. Bogers, personal communication, 2 May 2025). Several respondents acknowledged that the absence of clear norms or industry standards makes it easier to delay engagement or delegate responsibility elsewhere. As Bernard van Gastel notes, *“Sustainability often becomes paralyzing if framed as too abstract. People want to help, but they need a concrete sense of where to begin”* (B. van Gastel, personal communication, 3 June 2025). These findings highlight the critical role of strategic framing in transforming intention into initiative.

One common barrier identified across agencies was the perceived lack of control. Especially in smaller firms, there was a sense that individuals’ efforts have limited effect when systemic digital infrastructures are determined by large tech providers. The business manager at BlueFieldAgency remarked: *“We’re open to improving things, but sometimes it feels like we’re just a drop in the ocean. The real footprint comes from the platforms we depend on”* (K. Merckx, personal communication, 14 May 2025). A similar sentiment was shared at Ibizz, where action was seen as desirable but not always practical: *“I’d love to contribute, but we’re so dependent on tools like Google or AWS. What we do seems marginal in comparison”* (M. van Well, personal communication, 16 May 2025). According to van Gastel, this perception risks becoming self-defeating: *“If everyone waits for structural change, nothing will ever move. Local action is essential. It sends signals and creates momentum”* (B. van Gastel, personal communication, 3 June 2025). This reinforces the idea that meaningful change often starts small, even in the absence of broader system reform.

At the same time, several respondents recognised opportunities for immediate steps. Low-threshold actions such as cleaning up cloud storage, optimising websites, or reconsidering default settings were cited as feasible starting points. The creative director at KINEKT remarked: *“We could already start with cleaning up all those old assets and backups. That alone would make a difference”* (D. Bogers, personal communication, 2 May 2025). At TrueShift, similar ideas emerged, paired with the wish to make sustainability part of the agency’s long-term positioning: *“We want to be a frontrunner on this. If we embed this now, we can distinguish ourselves and help shape what’s normal in the sector”* (D. Efdé, personal communication, 12 May 2025). As van Gastel explains, *“Small actions can have large ripple effects, especially when embedded in professional cultures”* (B. van Gastel, personal communication, 3 June 2025). These views underline the value of starting with achievable goals, not only for immediate reduction but also for symbolic leadership.

Together, these perspectives suggest that willingness to act is present across the sector, but not yet structurally mobilized. Agencies express a growing readiness to take responsibility, yet often struggle

with ambiguity, dependency, and the absence of a shared vocabulary. Progress, therefore, will likely depend not on complete knowledge or perfect conditions, but on cultivating a mindset that embraces imperfection, experimentation, and early initiative.

4.3. The Moderating Role of Corporate Culture

4.3.1 Sustainability Orientation within the Organization

Across agencies, views on sustainability ranged from pragmatic to value-driven, revealing different levels of integration into the organizational identity. Some firms showed a deep-rooted commitment to long-term environmental values, while others approached the theme more reactively, driven by client expectations or incidental opportunities. These differences often reflect not just individual awareness, but the underlying organizational culture that either fosters or limits structural orientation towards sustainability.

In certain agencies, sustainability is embedded in a culture of social responsibility, where long-term impact and ethical considerations form part of the organizational self-image. The designer at TrueShift illustrated this connection clearly: *“It’s really part of our identity. We feel responsible not just for our clients but for society”* (D. Efdé, personal communication, 12 May 2025). Such statements point to a normative culture that encourages broader reflection beyond commercial objectives. At KINEKT, this orientation was less outward facing but still internally anchored: *“We try to do the right thing where we can, but it’s not always visible. It’s more an internal mindset than something we shout about”* (D. Bogers, personal communication, 2 May 2025). Here, an informal culture appears to support sustainable values, even if they are not yet structurally embedded or externally communicated.

In contrast, agencies with a more flexible or ad hoc culture showed sustainability orientations that were present, but fragmented or intuitive. At Ibizz, for example, sustainability was regarded as meaningful, but without institutional direction: *“We think it’s important, but we haven’t defined what it means for us yet. It’s more intuitive than structured”* (M. van Well, personal communication, 16 May 2025). Similarly, a project manager at BlueFieldAgency noted: *“We care about sustainability, but we don’t have a sustainability policy or something like that. It’s more about common sense”* (K. Merckx, personal communication, 14 May 2025). In these settings, organizational culture may be open to sustainable thinking, but lacks the formalisation needed to guide behaviour or decision-making consistently.

A more reactive stance was identified in agencies where external signals shaped internal awareness. At Go2People, the topic gained relevance only after client interest emerged: *“We started talking more about it when clients began asking questions. That triggered internal discussion too”* (W. Feijen, personal communication, 7 May 2025). In such cases, organizational culture appears to follow rather than drive sustainability, reacting to environmental cues rather than anticipating them. A comparable dynamic was found at Webreact, where sustainability became more acceptable when it aligned with

innovation goals: *“If we can combine sustainability with digital innovation, it becomes more interesting to everyone here”* (N. Ringersma, personal communication, 30 April 2025). This suggests a performance-oriented culture, where strategic alignment with business objectives is a prerequisite for action.

Altogether, these findings highlight that corporate culture moderates how sustainability is understood, valued, and acted upon. While some organizations foster a proactive culture that aligns values and practices, others maintain a more passive or instrumental stance. The degree to which sustainability becomes part of organizational identity depends not only on awareness or intention, but on how culture enables or constraints structural embedding.

4.3.2. Decision-Making Logic

The way decisions are made within agencies reveals not only operational priorities, but also the deeper values embedded in corporate culture. Whether choices are driven by financial logic, client expectations, ethical reasoning, or long-term sustainability goals depends largely on the internal norms and assumptions that guide strategic thinking. These organizational logics are rarely neutral; they reflect and reinforce what is considered acceptable or desirable behaviour within the firm.

In several cases, financial pragmatism and client orientation dominated the decision-making landscape. The creative director at KINEKT acknowledged: *“We’re often forced to make decisions based on what the clients, even if it’s not the most sustainable solution”* (D. Bogers, personal communication, 2 May 2025). This suggests a culture in which client satisfaction functions as the overriding logic, leaving limited space for environmental considerations unless they align with customer demand. At TrueShift, commercial concerns also shaped sustainability decisions: *“If sustainability increases the budget, we usually don’t even suggest it unless the client explicitly asks for it”* (D. Efdé, personal communication, 12 May 2025). These examples illustrate how a client-first orientation can unintentionally suppress more value-driven or ethical reasoning.

A similar trade-off emerged in responses from Webreact, where a developer explained: *“We’d like to choose the most sustainable tools, but we always end up comparing price and functionality. If there’s no clear added value, sustainability loses out”* (N. Ringersma, personal communication, 30 April 2025). In this context, decision-making appears dominated by performance logic, effectiveness and affordability guide most outcomes, and sustainability is weighed only when it adds measurable benefit. At Ibizz, this pragmatism was even more pronounced. The CTO recalled: *“We talked about green hosting once, but then someone said it’s slower. So that was the end of it”* (M. van Well, personal communication, 16 May 2025). The organizational culture in these settings appears to favour operational efficiency over abstract ideals, which limits the structural integration of sustainable alternatives.

At the same time, some agencies revealed more hybrid decision-making logics, blending financial rationality with ethical or intuitive reasoning. At Go2People, the CEO described a more values-based approach: *“We sometimes just go with what feels right, even if it’s not the cheapest option”* (W. Feijen, personal communication, 7 May 2025). While not formalised, this reflects a culture that makes space for moral judgement, even in commercially sensitive context. The business manager at BlueFieldAgency expressed a similarly conditional logic: *“If there are two good options, we’ll take the more sustainable one. But we won’t compromise quality or budget”* (K. Merckx, personal communication, 14 May 2025). This indicates that sustainability is present as a principle, but its influence is bounded by broader organizational priorities.

Taken together, these insights show that decision-making logic is shaped by more than individual preference or project requirements. It is moderated by the cultural frameworks that define which value are activated in daily practice, whether those be client centricity, cost control, ethical reflex, or long-term responsibility. The extent to which sustainability plays a meaningful role in these decisions depends not just on intention, but on how these cultural logics are constructed and prioritized within the organization.

4.3.3. Change Orientation

Organizational openness to innovation and change plays a central role in determining whether sustainability efforts gain traction. In environments where experimentation is encouraged and change is embraced, sustainability initiatives are more likely to emerge organically. By contrast cultures that prioritize routine, efficiency, or client delivery often have less room for proactive transformation. In this dynamic, corporate culture acts as a moderator: either enabling or constraining innovation that might otherwise support digital sustainability.

Several respondents described their organizations as being inherently curious or open-minded, which creates fertile ground for innovation. At Go2People, this openness was reflected in an exploratory mindset: *“We’re always trying out new tools. If someone finds something better, we’re allowed to test it”* (W. Feijen, personal communication, 7 May 2025). This quote illustrates a culture that allows space for bottom-up experimentation, which can lower the threshold for integrating more sustainable tools or workflows. At Webreact, a similar culture was identified. One respondent noted: *“People here love to improve things. If something can be done smarter or cleaner, someone will bring it up”* (N. Ringersma, personal communication, 30 April 2025). This signals a culture of continuous improvement, where innovation is not limited to efficiency gains but can extend to ethical or environmental dimensions.

Other agencies reported more conditional or hesitant form of openness. At KINEKT, for instance, experimentation was welcome but not always followed through: *“We sometimes talk about trying things differently, but it often stays at the idea level”* (D. Bogers, personal communication, 2 May

2025). The organizational culture here appears open in principle but constrained by a lack of prioritisation or time. Similarly, at TrueShift, the designer explained: *“We’re open to new things, but it has to fit our workflow. Otherwise, it just becomes another nice idea that gets postponed”* (D. Efdé, personal communication, 12 May 2025). In both cases, the appetite for innovation exists, but the culture lacks structures that translate openness into sustainable practice.

Smaller firms such as Ibizz also reflected this ambivalence. A team member observed: *“We’re flexible, but we also don’t like to complicate things. New ideas have to be really easy to adopt”* (M. van Well, personal communication, 16 May 2025). This quote shows that openness is moderated by simplicity and low perceived risk, a common feature in flatter organizations with limited capacity. At BlueFieldAgency, change was described as possible, but dependent on leadership endorsement: *“If our lead is enthusiastic, people will follow. But if he’s not convinced, things don’t move”* (K. Merkkx, personal communication, 14 May 2025). Here, the cultural logic is hierarchical rather than autonomous, which can slow down innovation unless key figures drive the process.

Together, these findings suggest that openness to innovation is not binary, but culturally mediated. Some agencies foster a culture of curiosity and autonomy that encourages sustainable experimentation, while others condition change on workflow compatibility, leadership approval, or simplicity. The degree to which sustainability is taken up as an innovation opportunity thus depends not only on awareness or strategy, but also on whether the corporate culture supports adaptive behaviour and risk-taking in practice. This readiness to evolve would, in theory, make them ideal candidates for adopting sustainability-oriented innovations. Yet when it comes to digital footprint reduction, this openness had not yet translated into consistent implementation. The reasons for this seem to not lie in resistance to change, but in the perceived vagueness and novelty of the concept itself.

4.4. Synthesis

The data reveals that positive framing strategies consistently evoke higher levels of engagement, reflection, and willingness to act among digital agencies than negative framing. Respondents frequently described positively framed messages as cooperative in tone, tangible, and strategically aligned with their entrepreneurial mindset. These frames were appreciated for emphasizing actionable benefits and aligning with long-term business values. In contrast, negative framing, although sometimes effective in raising initial awareness, was more often met with defensiveness, especially when perceived as accusatory or moralizing.

In terms of corporate awareness, most agencies demonstrated a basic but fragmented understanding of digital footprints. The concept was often described as abstract or invisible, indicating that awareness is still in a developmental phase. However, framed messaging proved effective in making digital sustainability more visible and actionable. Furthermore, the moderating role of corporate culture emerged as critical. Agencies with a value-based, innovation-driven, or sustainability-oriented culture

were notably more receptive to positively framed messages. Their openness to change and alignment with broader CSR goals facilitated stronger integration of digital sustainability into strategic thinking. Conversely, agencies with more risk-averse or operationally focused cultures tended to respond more cautiously and were more influenced by negative frames only when these aligned with financial or reputational incentives.

In sum, the findings underscore that the effectiveness of framing strategies is contingent upon cultural fit. Positive frames foster deeper awareness and longer-term commitment when they resonate with the organization's normative language and strategic objectives. Framing thus acts not as a one-size-fits-all tool, but as a contextual lever that, when well-aligned, can stimulate meaningful reflection and behavioural intent in the realm of digital sustainability.

5. Discussion and Conclusion

5.1. Discussion

5.1.1. Contribution to Science

This study offers several contributions to the academic understanding of how framing strategies influence corporate awareness, particularly within the context of digital sustainability. Drawing of Goffman's (1981) framing theory and subsequent applications in organizational communication (Kotlyar & Karakowsky, 2007; Tang & Chooi, 2021), prior research has posited that the effectiveness of message framing largely depends on the underlying orientation of the organization. More specifically, sustainability-oriented organizations are expected to respond in favourably to positive framing, which emphasizes collective gains and long-term value (Miska et al., 2017), while profit-driven organizations are theorized to react more strongly to negative framing, due to their sensitivity to risk, regulatory pressure, or reputational damage (Kahneman & Tversky, 1979; Kotlyar & Karakowsky, 2007).

The empirical findings of this study, however, contradict this theoretical expectation. Across all interviewed digital agencies positive frames consistently evoked stronger engagement, motivation, and willingness to act. This is particularly noteworthy because digital agencies, by their nature, operate in highly competitive markets and are inherently profit-oriented. Yet, when presented with positive framing that emphasized opportunity, innovation, and joint responsibility (e.g., "this saves CO2 and strengthens your market positioning"), participants indicated that these messages were more empowering and constructive. They did not merely recognize the environmental logic but also saw strategic alignment with their performance-driven goals. These findings challenge the assumption that financially oriented decision-makers are primarily motivated by threat-based communication (Breuer et al., 2023; Kahneman & Tversky, 1979).

This suggests that within corporate contexts, particularly in dynamic and innovation focused sectors, the binary between gain-seeking and loss-avoidance may be more fluid than theory assumes. As such, this research adds nuance to prospect theory and its application in organizational settings by demonstrating that positive framing can resonate strongly even in financially-driven environments, provided the frame connects with core operational logic – such as efficiency, market relevance, and reputational building.

Furthermore, while existing framing research often centres on content and emotional impact (Rosenblatt et al., 2018; Tang & Chooi, 2021), this study shows that credibility of the source and the technical or strategic grounding of the message play a crucial role in framing reception. Messages perceived as externally imposed or lacking contextual expertise were met with scepticism, regardless of their valence. In contrast, positively framed messages that reflected domain-specific language and business relevant metrics were seen as credible and even actionable echoing insights from Maheswaran and Meyers-Levy (1990) about message relevance and resonance.

Another key contribution lies in extending framing theory beyond its traditional focus on individual behaviour and public health messaging (Bonnetterre et al., 2024; Duthie et al., 2024), into the realm of organizational decision-making under strategic ambiguity. While existing studies have shown how frames shape consumer attitudes or citizen compliance, this research shows how frames interact with organizational routines, professional discourse, and competitive positioning. In doing so, it builds on Nutt's (1998) assertion that framing acts as the initial lens through which strategic action is defined and extends it by empirically demonstrating how positive frames can trigger not only cognitive awareness, but also organizational reflection and cultural alignment.

Lastly, this study contributes to the nascent field of digital sustainability communication by revealing how environmental topics that are still abstract (like digital footprints) can be made strategically relevant through framing. This supports recent work on digital tangibility (Dumitra et al., 2024; Guenther et al., 2023) and adds an applied layer: not only must these topics be made visible, but they must also be framed in ways that integrate with how organizations already make decisions – especially when sustainability is not yet structurally embedded.

In sum, this research challenges deterministic assumptions in the framing literature and highlights the importance of strategic congruence, message credibility, and sectoral context in determining framing effectiveness. These insights contribute to both the theoretical development of framing theory and the practical understanding of sustainability communication in digitally oriented, performance-driven sectors. To visually capture these refined insights, an updated framework has been developed below based on the empirical findings of this study.

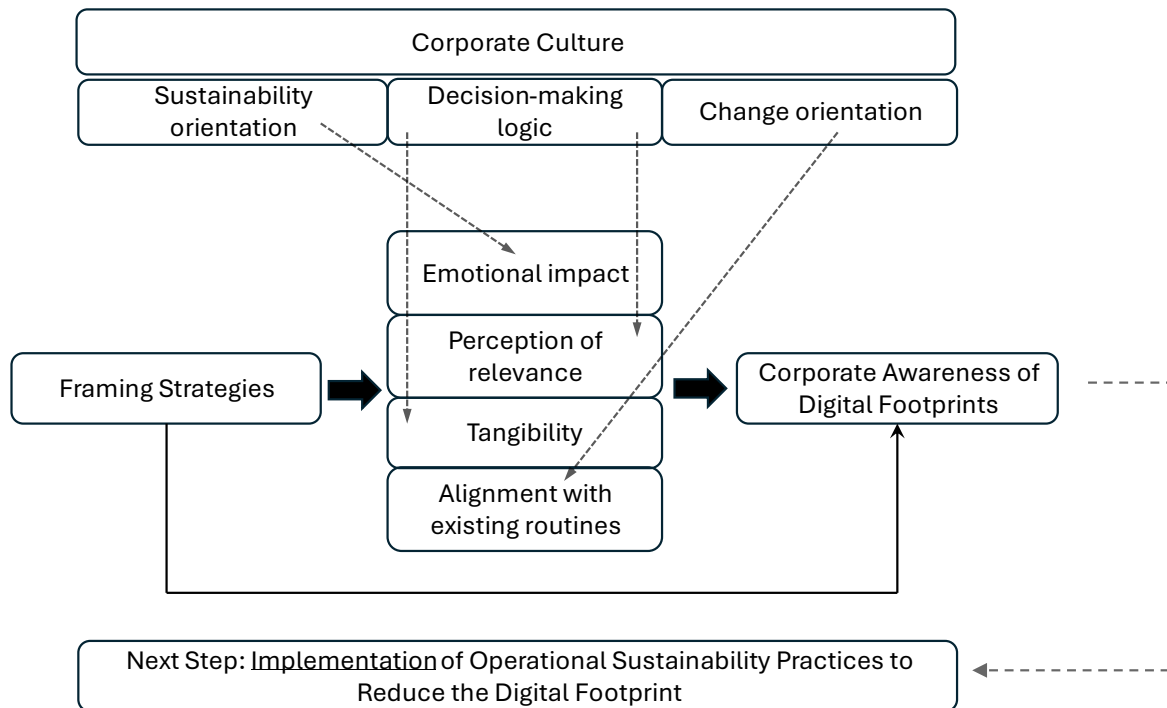


Figure 2: Data-driven updated framework illustrating how Framing Strategies affect Corporate Awareness of Digital Footprints, shaped by Corporate Culture.

The updated framework is the result of an inductive refinement process, based on the insights gathered through thematic analysis of the interview data. While the initial model (Figure 1 in section 2.5.) proposed a linear relationship wherein framing strategies influence corporate awareness moderated by three distinct elements of corporate culture (sustainability orientation, decision-making logic, and change orientation), the updated model introduces a more layered dynamic. Rather than depicting a direct causal path, the revised framework reveals that the effect of framing on corporate awareness is mediated by four interrelated mechanisms, which emerged consistently across cases: *emotional impact*, *perception of relevance*, *tangibility*, and *alignment with existing routines*. These mediators have been newly introduced to the model as the underlying causes that explain how and why framing strategies lead to increased corporate awareness of digital footprints.

These four mediators represent the psychological and operational pathways through which framing strategies, especially positive ones, gain traction within organizations. First, emotional impact refers to the affective resonance of the message: positively framed statements were frequently described as inspiring, hopeful, and energizing, enabling respondents to envision sustainable action not as a burden, but as an opportunity. Second, perception of relevance captures the extent to which the framed message was seen as strategically or operationally applicable. Frames that connected digital sustainability to performance indicators like efficiency or innovation were more likely to be taken seriously. Third, tangibility relates to the perceived concreteness of the environmental impact. Messages that included measurable CO₂ equivalents or visual metaphors (e.g., number of trees or flights saved) helped translate an abstract issue into a graspable concern. Finally, alignment with

existing routines signifies the degree to which the suggested actions or messages fit within current workflows, habits, and organizational language. When framing matched how agencies already operated or communicated, it was more readily embraced and internalized.

These mediators together illuminate that corporate awareness of digital footprints is not merely a matter of receiving information, but of processing it through a lens that makes it feel emotionally resonant, strategically meaningful, practically visible, and behaviourally compatible. Importantly, the model shows that these mediating dynamics are not exclusive to one type of framing but were far more pronounced in response to positive framing.

Moreover, as in the initial model, the effect of these mediators on awareness is shaped by three cultural moderators: *sustainability orientation*, *decision-making logic*, and *change orientation*. Each moderator plays a distinct role in shaping the influence of a specific mediator. Sustainability orientation primarily moderates emotional impact, as organizations with strong environmental values are more likely to experience positive affective responses to sustainability messaging. Decision-making logic moderates both the perception of relevance and tangibility, since organizations guided by financial or strategic criteria will only respond if messages are seen as operationally meaningful and supported by concrete data. Finally, change orientation moderates the alignment with existing routines, as a culture that embraces experimentation and adaptability is more likely to integrate new sustainability practices into daily workflows. This refined mapping clarifies how cultural context determines which elements of the framing process actually led to increased awareness of digital footprints.

Taken together, the updated framework provides a more nuanced understanding of how corporate awareness of digital footprints is formed. Rather than assuming a direct line from framing to awareness, the model identifies the causal mechanisms (mediators) through which frames exert influence, and the cultural conditions (moderators) under which this influence is either amplified or constrained. It thereby extends framing theory into the organizational domain by uncovering how awareness is socially and structurally constructed through both message design and cultural context.

5.1.2. Contribution to Society

The societal relevance of this research lies in its potential to raise awareness about an often overlooked yet increasingly urgent environmental issue: the growing ecological impact of global internet usage. While public discourse around sustainability has traditionally focused on sectors such as transportation, manufacturing, and agriculture, the digital domain has remained largely invisible in climate communication. Yet, the data is unequivocal: internet usage is now part of nearly every individual's daily life across the globe, and this usage continues to grow exponentially year by year (Guenther et al., 2023; Martínez-Acosta et al., 2023).

This ubiquitous digital presence comes with a significant and steadily increasing environmental footprint, largely driven by the energy consumption of data centres, network infrastructure, and end-user devices (Oo et al., 2023; Sharma & Dash, 2022). Despite these facts, awareness of this impact remains low – especially within organizations. Many companies continue to rely on resource-intensive digital infrastructure without considering its ecological consequences, in part because the environmental cost of digital consumption is rarely made visible or relatable.

The findings of this research suggest that this gap in awareness can be bridged through effective communication strategies, specifically through positive framing that emphasizes shared responsibility, achievable action, and strategic relevance. Rather than focusing on guilt or pressure, messages that align digital sustainability with innovation, efficiency, and futureproofing appear to resonate more strongly with corporate decision-makers. As digital infrastructure becomes a core part of societal functioning, sustainability within this domain should no longer be viewed as optional or niche, but as a structural element of responsible digital transformation.

By identifying communication strategies that effectively foster corporate awareness of digital footprints, this study offers a practical contribution toward making sustainability in the digital realm more actionable. Organizations play a key role in shaping digital consumption patterns, both internally and through the services they offer to clients and consumers. Increasing their awareness, and aligning this with operational and strategic goals, can accelerate the adoption of sustainable digital practices at scale. In this way, the insights generated by this study do not only inform academic theory but also support societal transitions towards a more sustainable digital future.

5.1.3. Methodological reflections

This study employed a qualitative, exploratory, and deductive research design, using semi-structured interviews with six Dutch digital agencies and one academic expert in sustainable digitalization to explore how positive and negative framing strategies influence corporate awareness of digital footprints. This design was selected to allow for in-depth exploration of complex and context-sensitive themes, such as the interaction between communication strategies and corporate culture. The qualitative approach enabled the capture of rich and detailed narratives that reflect how sustainability messaging is perceived and interpreted within real-world professional settings, insights that would likely be lost in standardized, quantitative instruments (Bleijenbergh, 2015). Moreover, the use of deductive reasoning, grounded in existing framing theory, allowed the research to test theoretical propositions in a novel context, contributing to theory transferability across domains. Lastly, to ensure field validity, the summarized results were sent back to the participating respondents for verification, allowing them to confirm that the findings accurately reflected their perspectives and professional realities.

However, several methodological limitations must be acknowledged. First, the relatively small and self-selective sample limits the breadth of perspectives represented. Although more than fifty digital agencies were contacted, only six interviews were conducted. This low response rate may reflect the unfamiliarity of perceived irrelevance of the topic among many digital agencies. As such, the sample is likely to be skewed toward organizations already engaged in or receptive to sustainability discourses, potentially overlooking the views of companies with different strategic orientations or lower levels of environmental awareness. This introduces a participation bias, which limits the diversity of organizational cultures and framing receptions captured in the study.

Second, while the qualitative design excels in contextual depth, it inherently limits generalizability. The findings are grounded in the specific context of Dutch digital agencies and cannot be readily extrapolated to other sectors or national settings without further empirical testing. Additionally, the reliance on self-reported perceptions introduces the possibility of social desirability bias, especially given the growing normative pressure to appear 'sustainable'. Participants may have portrayed their organizations in a more progressive light than their actual practices reflect, potentially inflating the perceived responsiveness to framing strategies.

Third, the deductive orientation of the study, while theoretically robust, may have constrained openness to entirely new constructs or unexpected mechanisms outside the predefined theoretical model. Although open coding allowed for inductive theme development, the overarching analytical lens remained theory driven.

In sum, while the methodological design enabled deep and theoretically informed insights into how digital agencies respond to sustainability framing, it also introduced limitations related to sample diversity, transferability, and potential bias.

5.2. Conclusion

5.2.1. Concluding remarks

The primary objective of this study was to explore how positive and negative framing strategies influence corporate awareness of digital footprints, and how this relationship is moderated by corporate culture. The central research question was: *“How do positive and negative framing strategies influence corporate awareness of digital footprints, and how is this relationship moderated by corporate culture?”*

The findings reveal that positive framing is generally more effective in fostering awareness and engagement among digital agencies. Messages that emphasize opportunities, collaboration, and reputational benefits aligned strongly with the values and communication styles of these organizations. In contrast, negative framing (while occasionally triggering urgency) was often met with

defensiveness or dismissed as irrelevant, particularly when perceived as accusatory or lacking actionable guidance.

This difference in reception can be further understood through four mediating mechanisms that shaped how framing was processed, regardless of whether the message was positive or negative. Emotional impact (inspiring and motivating tone) made messages feel engaging and personally relevant; perception of relevance (strategic or operational usefulness) determined whether the information aligned with business priorities; tangibility (concrete examples and visual comparisons) helped translate abstract concepts into concrete consequences; and alignment with existing routines (fit with current workflows) increased the likelihood of integration into daily practice. While both framing types could activate these mechanisms, positive frames generally did so more effectively, which helps explain their stronger impact on awareness and engagement.

Corporate culture played a decisive moderating role. Agencies with a strong sustainability orientation or innovation mindset were more receptive to framed messages, while more commercially driven or client-focused organizations required framing to align closely with existing strategic logics. Importantly, the study revealed that this moderating effect is not uniform but operates through distinct cultural mechanisms. A sustainability orientation influences how emotionally resonant a message is perceived; decision-making logic determines whether a message is seen as relevant and actionable; and change orientation affects whether new ideas are absorbed into daily routines. Even in environments open to innovation, the abstract and intangible nature of digital sustainability limited the degree to which awareness translated into consistent action, underscoring the need for framing strategies that fit not only with strategic priorities, but also with the deeper organizational culture.

Altogether, this study shows that raising corporate awareness of digital footprints requires more than just factual communication. Strategic framing, particularly when positively oriented and contextually embedded, can act as a catalyst for reflection and engagement. However, without the presence of the four mediators – *emotional impact*, *perception of relevance*, *tangibility*, and *alignment with existing routines* - even well-crafted messages may fail to inspire sustainable behaviour, as their effectiveness ultimately depends on corporate culture and the extent to which *sustainability orientation*, *decision-making logic* and *change orientation* are present.

5.2.2. Suggestions for future research

Building on the updated framework model (Figure 2 in section 5.1.1.) developed in this study, future research could focus more explicitly on implementation: how can increased awareness of digital footprints be translated into measurable behavioural and organizational change? While this research identifies framing and corporate culture as key ingredients for awareness, it remains unclear how this awareness can be operationalized in practice. The current study highlights that although respondents are often willing to act, concrete steps toward sustainable digital practices are not always taken. This

suggests a need for follow-up studies that investigate what types of interventions, organizational processes or communication tools are most effective in transforming awareness into consistent action and furthermore lowering the digital footprints. Such studies would help to close the gap between intention and execution and could provide valuable insights for practitioners seeking to embed digital sustainability structurally within their operations.

In addition, the quantification of digital footprints remains a significant research gap. Several participants in this study expressed a desire to act more sustainable yet reported difficulties due to the lack of reliable metrics or accessible benchmarks. The current absence of standardized calculation methods hampers the ability of organizations to understand the environmental impact of their digital activities and to track progress over time. Future research should therefore focus on the development, testing and validation of accessible tools or models for calculating the CO₂ emissions of common digital behaviours. Establishing such standards would not only enhance comparability across organizations but also help to make the concept of a digital footprint more tangible, actionable and accountable.

Finally, further conceptual clarification is needed around the meaning and scope of digital sustainability itself. As an emerging field, the concept remains fluid, with varying interpretations across disciplines and industries. This conceptual ambiguity limits both academic coherence and practical applicability. Future research could contribute by exploring how digital sustainability is framed and operationalized in different sectors, and by working toward a more unified definition that can inform both scholarly debate and organizational policy. Clarifying this foundational concept is essential for aligning expectations, setting goals and measuring progress effectively.

Altogether, future research should aim to bridge the gap between awareness and action by developing both conceptual clarity and practical tools that support organizations in taking responsibility for their digital environmental impact. In doing so, it can contribute to the professionalization and normalization of digital sustainability as an integral part of corporate environmental strategy.

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Appendices

Appendix A: Interview guides and questions

Interview questions - digital agencies

Thank you for participating in this interview. First of all, do you agree that this interview will be recorded and used for research purposes only?

This interview is part of my master's research at Radboud University. My research focuses on how digital agencies deal with awareness of their digital footprint. In doing so, I look specifically at how communication - in the form of positively or negatively worded messages - can influence that awareness. In addition, I am also curious about how corporate culture may play a role in this.

The interview takes about 45-60 minutes. Everything discussed will be kept confidential.

Part 1 - General questions on organisation & Corporate Awareness

1. Can you introduce yourself and briefly explain your function and role within the company?
2. What do the terms digital sustainability and digital footprint mean to you?
3. How aware is your organisation currently of the energy consumption and CO2 emissions associated with digital activities?

Part 2 - propositions on digital footprint (with framing effect)

I am now going to present you with a number of propositions on digital footprint. This is always a positively worded statement first, followed by a negatively worded statement. Followed by follow-up questions, in which I would like to hear your views on the framing propositions.

Framing statement 1: website design and hosting

- Positive framing
 - o “By designing and hosting websites more efficiently, your company can save up to 5,000kg of CO2 annually – comparable to the absorption capacity of more than 250 mature trees. This not only makes a direct contribution to the climate, but also strengthens your sustainable positioning towards customers” (Ecochain LCA Software, 2025; European Commission, 2023).
- Negative framing
 - o “Unoptimized websites can cause more than 5,000kg of unnecessary CO2 emissions annually – equivalent to 20,000km of car driving. Every heavy page counts and this impact remains completely under the radar for many companies” (Ecochain LCA Software, 2025; European Commission, 2023).

Follow-up questions:

4. Does the positive or negative message evoke more urgency or resistance in you? Why do you think it does?
5. Within your organisation, which of the two framing forms (positive or negative) do you think would lead most to behavioural change?
6. Do you think the way the message is framed also affects how seriously an organisation takes this issue?

Framing statement 2: cloud storage and digital archives

- Positive framing
 - o “By structurally cleaning unused files from cloud storage, your company can save thousands of gigabytes of data traffic annually – resulting in a CO2 reduction comparable to 25 return flights Amsterdam-Barcelona. This makes digital archiving not only more efficient, but also more sustainable” (Ecochain LCA Software, 2025; European Commission, 2023).
- Negative framing
 - o “Unused files often remain on servers for years, causing significant emissions unnoticed, annually, this results in CO2 emissions worldwide comparable to those of the aviation sector in a medium-sized country” (Ecochain LCA Software, 2025; European Commission, 2023).

Follow-up questions:

4. Does the positive or negative message evoke more urgency or resistance in you? Why do you think it does?
5. Within your organisation, which of the two framing forms (positive or negative) do you think would lead most to behavioural change?
6. Do you think the way the message is framed also affects how seriously an organisation takes this issue?

Part 3: Corporate Culture

7. To what extent does sustainability currently play a role in corporate strategy?

8. How would you describe the corporate culture within your organisation? Is it more profit-oriented or socially responsible with an eye on sustainability?
9. Is your organisation more likely to be: risk-averse/ conservative or innovative when it comes to change for digital sustainability?

Part 4: Reflection on framing & awareness?

10. Which of the two messages (positive or negative) stuck with you the most? Why?
11. Do you think such communications have an impact on how companies deal with their digital footprint?

Part 5: Closure

12. Do you have any additions or things that you yourself think are important around digital sustainability?
13. May I possibly approach you later for clarification or additional questions?

Interview Bernard van Gastel

Thank you for participating in this interview. First of all, do you agree that this interview will be recorded and used for research purposes only?

This interview is part of my master's research at Radboud University. My research focuses on how digital agencies deal with awareness of their digital footprint. In doing so, I look specifically at how communication - in the form of positively or negatively worded messages - can influence that awareness. In addition, I am also curious about how corporate culture may play a role in this. With this interview I want to link your academic perspective to the expertise of the digital agencies about digital sustainability.

The interview takes about 45-60 minutes. Everything discussed will be kept confidential.

Part 1 – Clarification of the term ‘digital sustainability’

1. What do we really mean by digital sustainability today?
2. How would you define digital sustainability in the context of organisations?
3. To what extent is digital sustainability something other than “green IT” or energy efficiency?
4. Do you see an evolution in how this concept has been used in recent years?

Part 2 – Clarification of the term ‘digital footprint’

5. What exactly does the term digital footprint mean in this context?
6. What elements do you think are part of an organisation's digital footprint?
7. To what extent are companies today aware of the size and impact of their digital footprint?
8. What do you think are the biggest “blind spots” in how companies handle their digital consumption?

Part 3 - Awareness

9. How can digital agencies raise awareness on this topic among their employees?
10. What communication strategies do you think are effective in creating awareness internally?
Do you think framing plays a role in this?

Part 4 – Action points

11. What concrete steps can they implement in their daily operations to reduce their digital footprint?
12. What do you think are (low-threshold) measures that digital agencies can take immediately?
13. What would you recommend in terms of monitoring or KPIs around digital sustainability?

Appendix B: Framing statements

Framing statement 1: website design and hosting

- Positive framing
 - “By designing and hosting websites more efficiently, your company can save up to 5,000kg of CO2 annually – comparable to the absorption capacity of more than 250 mature trees. This not only makes a direct contribution to the climate, but also strengthens your sustainable positioning towards customers” (Ecochain LCA Software, 2025; European Commission, 2023).
- Negative framing
 - “Unoptimized websites can cause more than 5,000kg of unnecessary CO2 emissions annually – equivalent to 20,000km of car driving. Every heavy page counts and this impact remains completely under the radar for many companies” (Ecochain LCA Software, 2025; European Commission, 2023).

Framing statement 2: cloud storage and digital archives

- Positive framing
 - “By structurally cleaning unused files from cloud storage, your company can save thousands of gigabytes of data traffic annually – resulting in a CO2 reduction comparable to 25 return flights Amsterdam-Barcelona. This makes digital archiving not only more efficient, but also more sustainable” (Ecochain LCA Software, 2025; European Commission, 2023).
- Negative framing
 - “Unused files often remain on servers for years, causing significant emissions unnoticed, annually, this results in CO2 emissions worldwide comparable to those of the aviation sector in a medium-sized country” (Ecochain LCA Software, 2025; European Commission, 2023).