

Saving the Planet... One Campaign at a Time

Understanding Engagement in Incentivized Environmental Sustainability Campaigns

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Abstract: Sustainable consumption is increasingly important as environmental challenges intensify, placing greater pressure on firms to encourage pro-environmental behavior. In this context, advertising is used to influence attitudes, intentions and behaviors, with incentives argued as an effective strategy. However, limited research has examined what drives engagement in real-world sustainability campaigns. This study examines the extent to which an extended Theory of Planned Behavior model explains individuals' intentions to engage in incentivized environmental sustainability campaigns. The model incorporates environmental concern, perceived incentive attractiveness, advertising attitude and brand attitude, and examines both behavioral intention and behavioral expectation. Using a quantitative approach, a stimulus-based online survey grounded in McDonald's Sweden's campaign "Deal with the Trash" was conducted among Swedish respondents (N = 427), enhancing ecological validity through the use of a real-world campaign stimulus. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). Results show that perceived incentive attractiveness, subjective norms and brand attitude are positively associated with intention, while attitude, perceived behavioral control and environmental concern are not significantly associated with intention. Advertising attitude is positively associated with brand attitude, while its direct relationship with intention is negative or non-significant, with brand attitude mediating this relationship. Further, environmental concern is positively associated with attitude. The findings highlight the contextual nature of Theory of Planned Behavior and identify perceived incentive attractiveness as the dominant predictor of intention, outweighing internal attitudinal drivers. This challenges traditional Theory of Planned Behavior assumptions and emphasizes the importance of incentives, social influence, and brand perception in incentivized environmental sustainability campaigns.

Keywords: Theory of Planned Behavior, Incentivized Environmental Sustainability Campaign, Environmental Sustainability Advertising, Behavioral Intention, Brand Attitude, Perceived Incentive Attractiveness

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1. Introduction

1.1 Background

Sustainable consumption has become an increasingly urgent global priority. The United Nations' Sustainable Development Goal 12 calls for ensuring responsible consumption and production patterns to reduce environmental degradation and resource depletion (United Nations, n.d.). Achieving this goal requires substantial changes in consumer behavior, making pro-environmental intentions and behaviors increasingly important. Pro-environmental intentions reflect individuals' willingness to engage in deliberate actions to protect the environment, reduce waste, conserve resources, and preserve natural ecosystems (Kotzya et al., 2024). Such actions are commonly referred to as pro-environmental behaviors, as they minimize environmental harm or contribute to environmental sustainability (Steg & Vlek, 2009). Further, the goal places increasing responsibility on companies to move beyond short-term economic interests and contribute more actively to broader societal and environmental well-being.

Historically, the traditional marketing mindset has focused on a linear economy, promoting overconsumption of the Earth's resources. This conventional view of marketing has contributed to negative environmental impacts by placing a strong emphasis on economic growth, regardless of the resources required (White et al., 2019). However, as the world's attention to sustainable consumption grows and consumers increasingly demand that companies act sustainably, firms have increased their sustainability efforts and often communicate these initiatives through advertising and marketing campaigns (Rathee & Milfeld, 2024).

Marketing and advertising can function not only as informational instruments but can also shape individuals' sustainability actions. From both ethical and strategic perspectives, understanding the drivers of pro-environmental behavior is critical, as firms that successfully adopt sustainable practices may gain a competitive advantage (White et al., 2019). A good strategy to encourage these behaviors is to use incentives (Yang et al., 2024).

With the growing focus on sustainability, research on the subject, especially in relation to consumer behavior, has expanded accordingly. Within consumer behavior research, the Theory of Planned Behavior (TPB) is one of the most frequently applied frameworks for

examining green purchase behavior (Xu et al., 2022). However, few studies have focused specifically on sustainability campaigns. Among those that do, TPB is often applied as the underlying framework, with findings indicating clear context-specific differences (Hashim et al., 2026). At the same time, broader research has only to a limited extent integrated marketing-related factors into established behavioral models such as the TPB (Haryono et al., 2025), suggesting that nuances might be missed.

Moreover, to the authors' best knowledge, much of the existing research on consumer intention in sustainability marketing relies on hypothetical or fictional advertisements as stimuli. In contrast, real-world marketing campaigns are less frequently used, indicating a gap between theory and practice. Furthermore, sustainability marketing research has been heavily concentrated in the United States (Ktisti et al., 2022), highlighting the need for studies in other, particularly environmentally focused, contexts. Sweden is a relevant case, widely recognized as a leader in environmental sustainability. It ranks among the top countries in the *Global Sustainable Competitiveness Index*, placing second in 2025, reflecting its strong capacity to sustain inclusive wealth without depleting natural, social, or intellectual capital (SolAbility, 2025). Public attitudes are also highly supportive, with most citizens recognizing climate change as a serious issue and expressing willingness to act (Swedish Environmental Protection Agency, 2024).

To address these gaps and contribute to both theory and practice, this study examines what drives individuals to engage in incentivized environmental sustainability campaigns using a research design grounded in a real, award-winning environmental sustainability campaign conducted in Sweden. Understanding these drivers helps companies design more effective sustainability campaigns that both increase competitive advantage and promote pro-environmental behaviors. By examining an actual campaign rather than a fictitious or experimentally constructed advertisement, the study enhances ecological validity.

The selected campaign, "Deal with the Trash", was implemented by McDonald's Sweden as part of its broader sustainability platform. The campaign featured digital and out-of-home advertisements that incentivized individuals to dispose of takeaway trash properly in exchange for app-based rewards. It demonstrated clear effects, including increased app downloads, increased visit intentions, and improved sustainability reputation (Sveriges Annonsörer, 2024). The campaign was chosen for its documented behavioral impact, national

reach, and industry recognition, making it a suitable empirical case to examine the drivers of campaign engagement in sustainability advertising. Further, incentives are commonly used in sustainability campaigns to encourage pro-environmental actions. Therefore, the authors sought to study a campaign using incentives, accounting for its potential effect on engagement.

The authors chose to study intention rather than actual behavior, as intentions are easier to measure and they reflect individuals' planned actions. Nonetheless, research has identified the "say-do gap," referring to the discrepancy between what people say and what they do, evident in pro-environmental contexts (Zaikauskaitė et al., 2023). Despite this, intentions remain central in established behavioral theories such as TPB, and they are considered the most direct predictor of behavior (Ajzen, 1991). Examining intentions, therefore, allows for insight into the underlying drivers of behavior, while acknowledging that actual behavior may be influenced by external barriers. Intention is further operationalized through both behavioral intention and behavioral expectation, enabling a more nuanced understanding of individuals' motivation to engage in campaigns and their perceived likelihood of carrying out the behavior.

1.2 Purpose and research question

The purpose of this study is to examine how incentivized environmental sustainability campaigns influence individuals' intentions. The study focuses not only on the encouraged pro-environmental action itself but also on engagement with the campaign more broadly, including interactions with the brand, as sustainability campaigns often aim to both encourage sustainable behaviors and strengthen customer-brand relationships.

By extending the TPB model, the study aims to integrate marketing-related factors, specifically advertising attitude and brand attitude, and contextual factors, represented by environmental concern and Perceived Incentive Attractiveness (PIA), to better understand what drives intentions in incentivized environmental sustainability campaigns. By analyzing reactions to a real-world campaign, the study seeks to provide a more ecologically valid understanding of the drivers of these intentions.

This resulted in the research question:

To what extent can the Theory of Planned Behavior model, extended with contextual and marketing-related factors, explain individuals' intentions to engage in incentivized environmental sustainability campaigns?

1.3 Delimitations

This study is subject to several delimitations that define its scope. First, the researchers focused on a single sustainability campaign, “Deal with the Trash” by McDonald’s. Relying on a single campaign allows for in-depth analysis of individuals’ reactions in a clearly defined campaign context. This approach was chosen to increase contextual consistency and reduce variability between campaign designs.

Secondly, the campaign was conducted in Sweden and the chosen sample was the Swedish population. The scope was delimited to a single country, as consumer attitudes and responses to environmental sustainability campaigns may vary across contexts. Sweden is a good case to study due to its high environmental awareness.

Moreover, this study focuses on intentions rather than behavior. The transition from intention to behavior is a complex process influenced by multiple external and situational factors, which lie outside the scope of this study. At the same time, the study is based on a campaign in which actual behavioral changes have been observed, suggesting that intentions in this context may be particularly relevant in relation to real-world actions. The study is delimited to examining factors that drive intentions, while the relationship between intention and behavior is left for future research.

Finally, the theoretical framework is delimited to the TPB (Ajzen, 1991), extended with advertising attitude and brand attitude accounting for marketing-related factors, as well as environmental concern and PIA accounting for contextual factors. These constructs are deemed relevant according to previous literature.

2. Theoretical framework

The theoretical framework begins with prior research on environmental sustainability advertising, followed by an overview of the TPB, which serves as the study's main theoretical foundation. Given the study's focus, TPB is examined in relation to sustainability and advertising research.

Research suggests that the explanatory power of the TPB can be strengthened through extensions, therefore additional variables are incorporated to better reflect the context of incentivized environmental sustainability campaigns. Environmental concern is included to capture the environmental dimension of the behavior, while PIA is added to reflect the campaign's incentive mechanism. Additionally, advertising attitude and brand attitude are incorporated to account for individuals' evaluations of both the advertisement and the brand.

Finally, behavioral expectation is introduced alongside behavioral intention to provide a more nuanced understanding of individuals' willingness and perceived likelihood of engaging in the campaign.

The literature was collected through the Stockholm School of Economics' database Primo, Scopus, and Google Scholar. In these databases relevant literature was searched for using keywords such as those shown in Figure 1. Beyond this search, the authors also utilised the support tool SciSpace to identify potentially relevant academic articles, by asking for articles using the same keywords. However, articles identified through SciSpace were not used directly without verification. Each source was subsequently located through Primo, Scopus, or Google Scholar, reviewed by the authors, and included only if considered relevant and academically appropriate.

Consumer behavior + Sustainable consumer behaviour + Sustainability + Sustainability marketing + Sustainability advertising + Environmental sustainability advertising + Theory of Planned Behavior + Environmental concern + Pro-environmental behavior + Pro-environmental intentions + Incentives + Perceived incentive attractiveness

Figure 1: Search words

2.1 Environmental sustainability advertising

Marketing and advertising are increasingly recognized as central mechanisms for promoting pro-environmental intention and behavior, since they can influence people to act more sustainably. Rather than simply informing consumers, advertising can shape attitudes, activate social norms, reduce perceived barriers, and enhance the perceived value of sustainable choices. From a strategic perspective, firms that act on sustainability demands can gain competitive advantages, including improved brand perceptions, operational efficiencies, opportunities for innovation, and long-term profitability. These emerge when sustainable businesses identify new products and markets, leverage emerging technologies, drive innovation and efficiency, and foster positive stakeholder perceptions (White et al., 2019).

Despite the growing interest in the field, conceptual clarity remains limited. The literature uses multiple overlapping terms, often interchangeably and without a clear distinction (Golob et al., 2023). Green marketing is a commonly used term and has been defined as promotional messages that address a product's relationship with the biophysical environment, promote a green lifestyle, or present a corporate image of environmental responsibility (Sander et al., 2021). Furthermore, green advertising is defined as promotional messages appealing to environmentally concerned consumers, often emphasizing product-level environmental benefits (Kwon et al., 2024; Li, 2025).

In contrast, sustainability marketing represents a broader philosophy integrating economic, environmental, and social dimensions into the marketing mix (Dangelico & Vocalelli, 2017). Building on this broader perspective, sustainability advertising refers to communication about a firm's sustainability initiatives, practices, or products across all the aforementioned dimensions. Within this broader domain, environmental sustainability advertising specifically refers to promotional messages about a company's environmental sustainability initiatives, commitments, or attributes (Rathee & Milfeld, 2024).

Given these definitional ambiguities and conceptual distinctions, this study adopts the term environmental sustainability advertising. Since the campaign examined in this study communicates a broader corporate environmental initiative aimed at behavioral engagement rather than solely product attributes, environmental sustainability advertising most accurately captures the scope and intent of the communication under investigation.

Moreover, the effectiveness of environmental sustainability advertising depends on contextual and source-related factors, including brand reputation, message design, and perceived credibility (Rathee & Milfeld, 2024). These context-specific differences are prevalent in research on the subject, especially in sustainability campaign research, where TPB is a commonly used framework (Hashim et al., 2026).

2.2 Theory of Planned Behavior

TPB is a conceptual framework seeking to explain an individual's behavior as a result of an intention to act. It derives from the Theory of Reasoned Action, which uses attitudes and subjective norms to explain behavioral intention and behavior. However, research has found that behaviors can be predicted from intentions with great accuracy only when there are no control problems. This led to the addition of Perceived Behavioral Control (PBC) in the TPB model. When attitudes and subjective norms are positive, and an individual feels capable of doing it, intentions and actual behavior increase. However, the relative importance of each will most likely vary by context. This means that, in some cases, only one mechanism may be sufficient to explain intentions in certain settings (Ajzen, 1991).

Attitudes, subjective norms, and PBC are grounded in underlying behavioral, normative, and control beliefs (Ajzen, 1991). As the present study focuses on the motivational drivers leading to intention rather than belief formation, the study centers on these higher-level constructs.

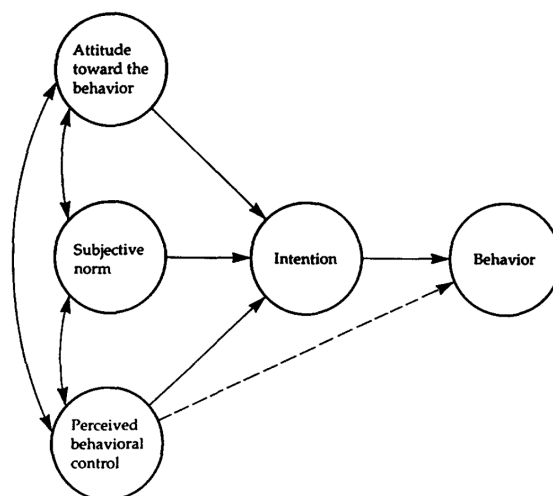


Figure 2: Theory of Planned Behavior (Ajzen, 1991)

2.2.1 Theory of Planned Behavior in Sustainability

Sustainable consumer behavior research has been largely grounded in social psychological theories, with the TPB emerging as a predominant explanatory framework (Saari et al., 2021). TPB has become a central model for explaining sustainability-related intentions and behaviors across a wide range of domains, including alternative transportation, waste recycling, water conservation, energy conservation, and low-carbon consumption. The number of studies applying TPB to pro-environmental practices has increased substantially in recent years, proving its importance within sustainability research (Zeng et al., 2023). Across contexts, the core TPB constructs often predict pro-environmental intention, with attitude and PBC often emerging as the strongest determinants (De Groot & Steg, 2007; Kotzya et al., 2024; Paul et al., 2016; Wang & Li, 2022; Zaremohzzabieh et al., 2021). However, sustainable consumption is a complex phenomenon shaped by individual, social, and contextual factors, leading to varying results (Raza et al., 2020).

Beyond applying the standard TPB framework, sustainability research frequently extends the model by incorporating context-specific constructs to enhance predictive power (Zeng et al., 2023). Meta-analytic evidence integrating 90 studies demonstrates that including sustainability-specific constructs such as environmental concern, perceived consumer effectiveness, and environmental knowledge significantly enhances TPB's explanatory capacity. The additions are required because the TPB does not account for the role of motivational factors in shaping intentions to engage in green consumption (Zaremohzzabieh et al., 2021). Among these extensions, environmental concern is the most frequently incorporated and is a key predictor of sustainable behavioral intentions and attitudes (De Groot & Steg, 2007; Emekci, 2019; Paul et al., 2016; Saari et al., 2021; Wang & Li, 2022).

2.2.2 Theory of Planned Behavior in Advertising

Compared to the extensive body of research on sustainable consumer behavior, the application of the TPB within advertising and branding contexts remains relatively underexplored. Existing studies have primarily focused on digital environments. While these studies generally find that the core TPB constructs predict behavioral intention, with attitude often emerging as the strongest predictor, they rarely provide a clear explanation (Chu et al., 2016; Lim et al., 2024; Sanne & Wiese, 2018). Moreover, the results are not entirely consistent. For instance, PBC has been shown to have limited explanatory power in certain

contexts, such as Facebook advertising, suggesting that the model may not fully capture the complexities of consumer responses (Sanne & Wiese, 2018).

Amarullah and Handriana (2023) extend the application of the TPB to “buy-local” campaigns and similarly find support for all three core constructs in predicting participation intentions. More recent research has begun to move beyond prediction by applying TPB as a framework for designing interventions. Masoodi et al. (2024), for example, propose a multi-phase campaign based on the TPB. While this approach represents a more applied use of the theory, the study is limited to a research protocol and does not yet provide empirical evidence of effectiveness. Overall, existing research on TPB within advertising contexts is limited. Specifically, there is a notable gap in studies that use TPB to examine the effects of real-world advertisements.

2.2.3 Theory of Planned Behavior Constructs

2.2.3.1 Intentions

Within TPB, intentions are indicators of how hard people are willing to try and how much effort they plan to exert to perform the behavior. Since behavior is assumed to follow planned effort, intentions are considered key predictors of actual behavior (Ajzen, 1991). These intentions are often called behavioral intentions, even though it is not always explicitly stated (Warshaw & Davis, 1985).

Since intentions are key predictors of behavior within the TPB and are more easily measured than actual behavior, they are used as the dependent variable in this study. Many studies examine either intention or behavior, but few incorporate both (Zaikauskaitė et al., 2023). Observed behavior typically implies the presence of intention, as intention precedes and predicts behavior. Therefore, behavior is occasionally referred to in this study, even though the primary focus remains on intention.

Furthermore, researchers have acknowledged that while intentions are good predictors of behavior, some individuals might not always have sufficient control to enact their intentions, and similarly, a lack of facilitating conditions may prevent intended behavior from being performed (Sheeran, 2002). Nonetheless, intention remains the best predictor of behavior, and

prior research indicates that intentions and behaviors are closely related constructs (Zaikauskaitė et al., 2023).

2.2.3.2 Attitude

Within TPB, attitude refers to an individual's overall evaluation of a behavior (Ajzen, 1991) and consistently emerges as one of the strongest predictors of behavioral intention. In sustainability research, attitude has been shown to play a central role in shaping pro-environmental intentions (De Groot & Steg, 2007; Paul et al., 2016; Wang & Li, 2022; Zaremohzzabieh et al., 2021). This aligns with Ajzen's (1991) argument that attitudes are shaped by behavioral beliefs about the outcomes of a behavior. In sustainability contexts, behaviors are often associated with positively valued outcomes, such as environmental protection, which may strengthen favorable attitudes and subsequent intentions.

Nonetheless, others have found that, in some contexts related to green purchases, attitude does not have a significant effect on intention (Xu et al., 2020), indicating that the theory is contextual. This inconsistency may be explained by the well-documented attitude-behavior gap, referring to discrepancies between expressed attitudes and actual behaviors commonly assumed to follow from behavioral intentions. This phenomenon challenges the traditional theoretical assumption that positive attitudes naturally translate into corresponding intentions and behaviors. These inconsistencies are particularly pronounced in the context of pro-environmental decision-making (Zaikauskaitė et al., 2023). In the sustainability context, this gap may be more visible because people tend to favor socially acceptable, environmentally friendly behaviors (Kotzya et al., 2024).

Moreover, in advertising and branding contexts, attitude has been identified as a key determinant of individuals' responses, frequently outperforming subjective norms and PBC in predicting intention (Amarullah & Handriana, 2023; Chu et al., 2016; Lim et al., 2024; Sanne & Wiese, 2018), once again supporting Ajzen's (1991) original argument. Given the theoretical importance of attitude within the TPB and its demonstrated predictive strength across contexts, it is expected to play a central role in shaping intention to engage in sustainability campaigns.

H1: Attitude toward the campaign behavior has a positive effect on behavioral intention.

2.2.3.3 Subjective norms

Subjective norms refer to the perceived social pressure to perform or not perform a given behavior (Ajzen, 1991). In sustainability research, subjective norms have been shown to influence pro-environmental intentions, although their effect is often weaker and less consistent compared to attitude and PBC (De Groot & Steg, 2007; Kotyza et al., 2024; Wang & Li, 2022; Zaremohzzabieh et al., 2021). Individuals form beliefs about whether important others approve or disapprove of a behavior, weighted by an individual's motivation to comply, which in turn shapes the formation of behavioral intentions (Ajzen, 1991). In this context, individuals are more likely to engage in pro-environmental behaviors since they believe that people who are important to them promote and encourage them (Khan et al., 2019). Nonetheless, the limited impact may be due to individuals holding more individualistic views and seeing environmental responsibility as a personal matter. It may also be related to how norms are measured, as focusing on others' expectations captures social pressure but does not reflect whether others actually engage in pro-environmental behavior (Kotyza et al., 2024).

Moreover, some studies show that subjective norms do not exert any significant effect on intentions in the sustainability context. This suggests individuals may be uncertain whether their friends or family want them to act sustainably, and overall, individuals in these studies do not seem to view the approval of significant others as an important factor in their decision-making. In fact, their close social contacts generally failed to provide any positive encouragement or motivation to act green (Paul et al., 2016; Xu et al., 2020). This effect may also be context-dependent, as subjective norms tend to play a stronger role in collectivistic cultures. However, this influence is not consistently observed, suggesting that sustainability is not yet deeply embedded in these cultures (Wang & Li, 2022).

In advertising and branding contexts, the role of subjective norms is clear. Social influence contributes to behavioral intention, although it is not always the strongest predictor (Amarullah & Handriana, 2023; Chu et al., 2016; Lim et al., 2024; Sanne & Wiese, 2018). These findings are supported by Ajzen (1991).

Given the ambiguous, context-dependent findings from sustainability research and the clear effect from advertising research, it is believed that a sustainable culture, such as Sweden, would show subjective norms to have a positive effect on intention.

H2: Subjective norms associated with the campaign behavior have a positive effect on behavioral intention.

2.2.3.4 Perceived Behavioral Control

PBC refers to the extent to which individuals perceive that they have the ability and resources to perform a given behavior (Ajzen, 1991). In sustainability research, PBC has been shown to significantly influence behavioral intention and, in some cases, it is even the strongest predictor. Further, it has been shown to be a direct predictor of behavior, particularly in contexts where actions require effort, knowledge, or access to resources (De Groot & Steg, 2007; Kotyza et al., 2024; Paul et al., 2016; Wang & Li, 2022; Xu et al., 2020; Zaremohzzabieh et al., 2021). This indicates that the availability of enablers concerning the behavior and the resources individuals possess (e.g., time, money) are key factors influencing their engagement (Xu et al., 2020).

This is consistent with Ajzen's (1991) view that PBC influences intention because it reflects an individual's assessment of how easy or difficult it is to perform a behavior. When individuals believe they possess the necessary resources and face few barriers, they are more likely to form a strong intention to engage in the behavior. Nonetheless, there are cases where PBC does not predict intention. The varying influence can be attributed to differences in the level of inconvenience associated with different pro-environmental behaviors (Wang & Li, 2022).

Moreover, in advertising and branding contexts, the role of PBC appears inconsistent. While some studies confirm its predictive effect (Amarullah & Handriana, 2023; Chu et al., 2016; Lim et al., 2024), others find non-significant relationships (Sanne & Wiese, 2018). The reason behind the latter may be that respondents are already capable of performing the behavior, reducing the predictive power of PBC (Sanne & Wiese, 2018).

Most previous research posits that PBC plays an important role in shaping behavioral intention, particularly when individuals perceive that they have the necessary resources and face limited barriers to action. In the context of this study, the campaign promotes behaviors that are relatively accessible and do not require substantial effort or specialized resources. Therefore, it is believed that PBC will have an effect on intention.

H3: Perceived Behavioral Control associated with the campaign behavior has a positive effect on behavioral intention.

2.3 Environmental concern

Environmental concern describes the degree to which individuals believe that environmental issues are important to societal welfare. It also reflects a value orientation toward the natural environment, including awareness of environmental threats such as pollution and resource overuse (Kamalanon et al., 2022; Saari et al., 2021).

Environmental concern has been added as an extension to TPB in several studies that explain sustainable behavior, highlighting its predictive power in explaining intention (Kamalanon et al., 2022; Kotyza et al., 2024; Paul et al., 2016). In the context of sustainability campaigns, environmental concern is consistently identified as a significant predictor of pro-environmental intentions. This relationship is shaped by underlying mechanisms such as moral obligations, as well as contextual factors like policy and infrastructure (Hashim et al., 2026). However, its effect can vary, as individuals may be driven by self-interest, potentially outweighing the influence of environmental concern (Saari et al., 2021). Moreover, some studies find that environmental concern can indirectly affect intention through attitude (Emekci, 2019; Paul et al., 2016). Nonetheless, results are contradictory with others' finding no indirect effect (De Groot & Steg, 2007), resulting in uncertainty regarding the indirect connection between environmental concern and intention through attitude.

Furthermore, many studies find that environmental concern has a positive effect on attitude directly (De Groot & Steg, 2007; Emekci, 2019; Paul et al., 2016; Wang & Li, 2022). This is consistent with Ajzen's (1991) argument that attitudes are shaped by beliefs about a behavior's outcomes. Individuals with higher environmental concern are therefore more likely to evaluate pro-environmental behaviors positively, strengthening favorable attitudes toward engaging in them.

Taking the aforementioned literature into account, the authors argue that the connection between attitude, environmental concern, and behavioral intention is characterized by direct

effects. Environmental concern is therefore expected to have a direct effect on both intention and attitude.

H4: Environmental concern has a positive effect on attitude toward the campaign behavior.

H5: Environmental concern has a positive effect on behavioral intention.

2.4 Perceived Incentive Attractiveness

Incentive motivation theory suggests that behavior is a function of both drive and incentive. Drive refers to physiological states that generate needs, whereas incentives refer to the positive or negative values associated with a specific situation. Recent research suggests that incentives constitute one factor influencing behavior, and that their effectiveness depends on the context in which they are applied as well as individual characteristics (Bandhu et al., 2024). Incentives can be understood as external rewards provided by organizations or individuals to promote desired behaviors (Bruers, 2024; Bucchiarone et al., 2023). These rewards reinforce the behavior and increase the likelihood of it being repeated (Bucchiarone et al., 2023).

Research suggests that incentives can encourage pro-environmental actions. However, the effectiveness of incentives depends on how they are designed, delivered, and perceived by the individuals they target. Individual differences, such as personality traits, preferences, and prior experiences, influence how people respond to the same incentive. Additionally, the effectiveness of incentives is found to be the greatest when complementing existing motivations and aligning with fundamental psychological drivers of behavior (Bandhu et al., 2024; Barile et al., 2015; Bucchiarone et al., 2023; Gneezy et al., 2011; Mahmoodi et al., 2020).

Research also highlights the importance of how incentives are perceived in relation to their effectiveness, as those that increase perceived attractiveness can enhance behavioral willingness, while others may be less effective due to perceived threats to freedom. Additionally, the degree of involvement can moderate these effects, suggesting that incentives play a greater role in low-involvement situations and are weaker when involvement is high, as individuals already associate themselves with the behavior and see it as relevant to them (Gong et al., 2023).

Furthermore, the positive effects of incentives have also been observed in advertising contexts, where they positively influence consumer behavior and enhance both the experience of the campaign itself and its behavioral outcomes (Bucchiarone et al., 2023; Tezerjany & Mason, 2024). At the same time, potential adverse effects have been noted, such as the crowding out effect, where intrinsic motivation may be undermined in both the short and long term (Gneezy et al., 2011). Morris et al. (2022) propose an alternative approach that emphasizes studying discrete drivers of behavior, rather than focusing specifically on intrinsic or extrinsic motivations, even though these drivers may possess these qualities.

Given the heterogeneity among individuals, particularly in large-scale advertising campaigns targeting broad audiences, the effectiveness of incentives cannot be understood solely in terms of their objective characteristics. Instead, it is necessary to consider how incentives are perceived at the individual level and subsequently aggregate these perceptions to assess their overall effect. In line with this, Orsingher and Wirtz (2018) find that it is the perceived attractiveness of the incentive, not the face value, that determines individuals' intention to engage with the incentive, as evaluations of attractiveness are inherently subjective and personal. Similarly, Wirtz et al. (2019) find that reward attractiveness is an important determinant of behavioral responses.

Accordingly, as individuals who perceive incentives as more attractive are more likely to engage with them, PIA is expected to positively influence behavioral intention.

H6: Perceived Incentive Attractiveness has a positive effect on behavioral intention.

2.5 Advertising Attitude

Mitchell and Olson (1981) argue that attitude toward the advertisement reflects individuals' overall evaluation of the advertising stimulus and should be considered conceptually distinct from brand attitude. This is suggested as it provides direct insights into how consumers respond to an advertisement. Similarly, advertising attitude is defined as "consumers' favorable or unfavorable responses to a particular advertisement based on various advertisement factors", referring to the emotional change that occurs after viewing the advertisement (Lee et al., 2017, para. 11).

Advertising attitude is consistently identified as an important antecedent of brand attitude, influencing consumers' overall evaluations of a brand (Jublee et al., 2023; Lee et al., 2017; Wahid & Ahmed, 2011). This relationship may be explained by advertisements creating associations between the brand and the communicated message, allowing values and perceptions to transfer from brands to consumers (Jublee et al., 2023; Wahid & Ahmed, 2011).

Building on this, the literature indicates that individuals' attitudes toward an advertisement directly shape their evaluations of the advertised brand. More favorable attitudes toward the advertisement are therefore anticipated to result in more positive brand evaluations.

H7: Advertising attitude has a positive effect on brand attitude.

Research demonstrates that individuals' attitudes toward advertisements influence their responses to advertising and subsequent behavior. Across contexts, attitudes toward advertising have been found to positively influence both intention and behavioral outcomes (Ramadhani et al., 2020; Saadeghvaziri et al., 2013; Wolin et al., 2002; Yoon & Kim, 2016). Specifically, in online advertising, favorable attitudes toward advertisements have been shown to significantly predict ad-clicking behavior and online shopping experiences, with cultural factors potentially affecting these attitudes and subsequent behavior (Wang & Sun, 2010). These findings suggest that when individuals hold favorable evaluations of advertisements, they are more inclined to act on them, increasing the likelihood of behavioral responses.

As such, advertising attitude is widely regarded as a key indicator of advertising effectiveness and a predictor of behavioral intentions. However, there exist contradictory results. Balaskas et al. (2023) report that attitudes toward green advertising did not significantly predict consumers' purchase intention, suggesting that attitudes toward advertisements alone may be insufficient to reliably forecast consumer behavior.

While these findings indicate that the relationship between advertising attitude and behavioral intention is not always consistent, the vast majority of empirical evidence supports a positive association between the two constructs. As advertising attitude reflects consumers'

immediate evaluative and emotional response to an advertisement, it is expected to influence their subsequent behavioral intentions. In the context of this study, a more favorable attitude toward the advertisement is therefore anticipated to increase the likelihood of engaging in the behavior it promotes.

H8: Advertising attitude has a positive effect on behavioral intention

2.6 Brand Attitude

Brand attitude refers to consumers' positive or negative evaluations of a brand, encompassing both their cognitive recognition and emotional responses (Lee et al., 2017). Similarly, it has been described as consumers' willingness to engage repeatedly with a brand, reflecting their overall positive or negative feelings toward it. As such, brand attitude captures individuals' enduring perceptions of a brand, which are shaped through their interactions and experiences with it (Salehzadeh & Pool, 2017).

In advertising, brand attitude is a key component of the consumer response process (Sander et al., 2021). Despite its central role, prior research has primarily focused on the direct influence of advertising attitude on behavioral intention, with comparatively less attention given to the role of brand attitude in shaping such outcomes (Panggati et al., 2023).

However, empirical evidence shows that more positive brand attitudes are associated with higher intentions (Chin et al., 2019; Putri & Roostika, 2021; Zhao et al., 2024). In other words, the more favorable consumers' perceptions of a brand, the more likely they are to intend to interact with that brand. This relationship can be explained by the roles of trust and familiarity, as stronger brand attitudes reflect higher consumer confidence and recognition, increasing the likelihood of brand interaction (Putri & Roostika, 2021). Further, when consumers' understanding and beliefs about a brand are strengthened, intention increases (Zhao et al., 2024). Based on prior literature, brand attitude is believed to affect behavioral intention.

H9: Brand attitude has a positive effect on behavioral intention.

Furthermore, exposure to an advertisement leads to attitudinal responses toward both the advertisement and the brand (Sander et al., 2021), and attitudes towards advertisements and brands are often conceptualized as a causal chain ultimately influencing intention (Lee et al., 2017). This indicates that brand attitude can potentially function as a mechanism through which advertising attitude influences behavioral intention.

Prior research has examined the relationship between consumers' attitudes toward advertising and their brand attitude. However, relatively few studies have conceptualized brand attitude as a mediating variable between advertising attitude and behavior intention (Panggati et al., 2023). Nonetheless, there is existing empirical evidence supporting this mediating role, specifically as a partial mediator. This means that favorable attitudes toward an advertisement not only directly increase purchase intention but also indirectly influence intention through more positive brand evaluations (Panggati et al., 2023; Wahid & Ahmed, 2011), highlighting the importance of brand evaluations in shaping intentions.

Building on previous literature, this study adopts a mediating perspective, focusing on brand attitude as a mediator in the relationship between advertising attitude and behavioral intention. Accordingly, it is expected that positive attitudes towards the advertisement will enhance brand attitudes, which in turn will strengthen individuals' behavioral intentions.

H10: Brand attitude acts as a mediator between advertising attitude and behavioral intention.

2.7 Behavioral expectation

As stated in section 2.2.3.1, intentions are defined as indicators of how hard people are willing to try and how much of an effort they are planning to exert in order to perform the behavior (Ajzen, 1991). While TPB focuses on behavioral intention, researchers often mix up two different constructs, namely behavioral intention and behavioral expectation. Behavioral expectation reflects an individual's estimation of the likelihood that they will actually perform a behavior, incorporating not only intention but also constraints, habits, and anticipated changes. As a result, behavioral expectation has been shown to be a more accurate predictor of actual behavior (Warshaw & Davis, 1985). Including behavioral expectation alongside behavioral intention allows for a more realistic assessment of how individuals are

likely to act in response to advertising stimuli since it accounts for situational limitations. Therefore, it adds a more nuanced perspective to the study. As such, ten additional hypotheses are proposed, mirroring the original hypotheses, to examine whether the effects of the independent variables differ when behavioral expectation is used as the dependent variable instead of behavioral intention.

H1^{BE}: Attitude toward the campaign behavior has a positive effect on behavioral expectation.

H2^{BE}: Subjective norms associated with the campaign behavior have a positive effect on behavioral expectation.

H3^{BE}: Perceived Behavioral Control associated with the campaign behavior has a positive effect on behavioral expectation.

H4^{BE}: Environmental concern has a positive effect on attitude toward the campaign behavior.

H5^{BE}: Environmental concern has a positive effect on behavioral expectation.

H6^{BE}: Perceived Incentive Attractiveness has a positive effect on behavioral expectation.

H7^{BE}: Advertising attitude has a positive effect on brand attitude.

H8^{BE}: Advertising attitude has a positive effect on behavioral expectation.

H9^{BE}: Brand attitude has a positive effect on behavioral expectation.

H10^{BE}: Brand attitude acts as a mediator between advertising attitude and behavioral expectation.

2.8 Conceptual model and Research gap

With the increasing focus on sustainability, together with the growing role of advertising in encouraging more sustainable behaviors, further research within this area is needed. To the authors' best knowledge, there is limited research explicitly linking real-world marketing stimuli, such as campaigns, to individuals' psychological responses and engagement intentions in sustainability marketing, limiting the connection between theory and practice. Consequently, the drivers of intention in connection to real-world sustainability campaigns remain under-theorized, highlighting this study's main research gap.

Further, sustainability marketing research is to a large extent focused on the United States (Ktisti et al., 2022), underscoring the need for studies in other contexts. Specifically, environmentally focused countries are interesting, as countries with low environmental focus

could have several factors and barriers influencing their individuals' intentions. In contrast, Sweden is a relevant context, widely recognized as a leader in environmental sustainability and characterized by strong public environmental awareness.

To address these gaps, the authors examine drivers affecting intention in a real-world incentivized environmental sustainability campaign in Sweden. The study applies TPB as the main theoretical framework, extending it with contextual and marketing-related factors to increase the model's predictive power. Based on this theoretical foundation, a conceptual model illustrating the relationships between the independent variables and intention is proposed. While the model presents intention as the dependent variable, it is empirically tested using both behavioral intention and behavioral expectation, as outlined in the preceding section.

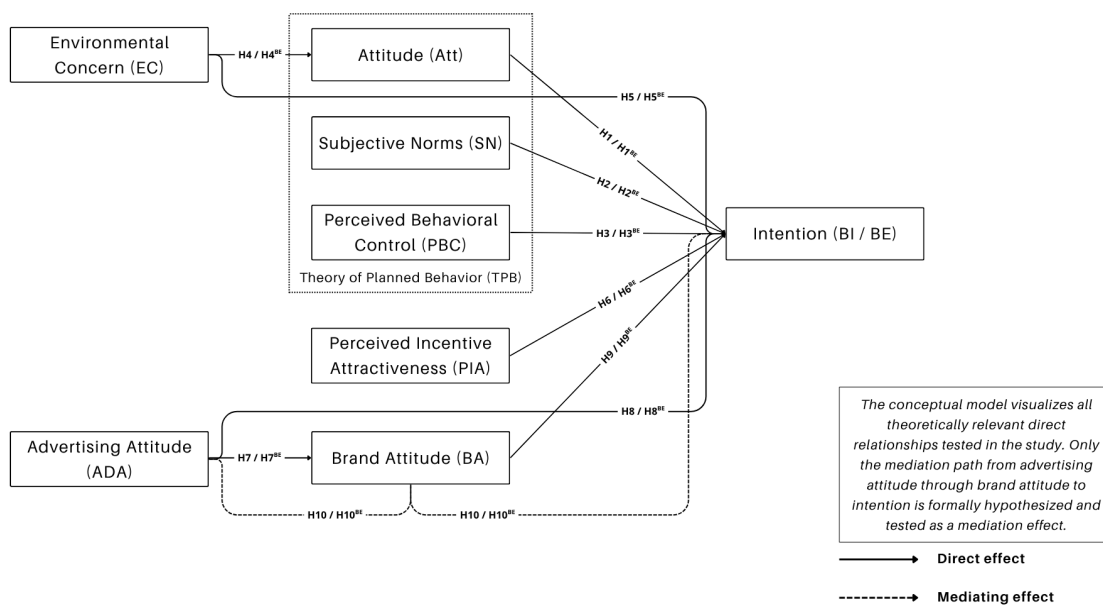


Figure 3: Conceptual model made by the authors

3. Methodology

3.1 Scientific research approach and design

This study follows an explanatory design, as it aims to explain how an extended model of TPB influences individuals' intentions to engage in incentivized environmental sustainability campaigns. While TPB has frequently been applied in sustainability research, fewer studies have examined sustainability campaigns. Nonetheless, rather than developing a new theoretical framework, this study extends existing theory by applying TPB with constructs related to the context of incentivized environmental sustainability campaigns. Therefore, a deductive approach is considered appropriate, as the study builds on established theory and empirically tests hypothesized relationships between predefined constructs in new contexts (Bell et al., 2022). Accordingly, a quantitative approach is employed to statistically examine these relationships and assess the explanatory power of the extended TPB model.

Furthermore, the study adopts an ontological position of objectivism, meaning that social phenomena are perceived to exist in an objective reality, independent of social actors. Regarding the epistemological position, the study methodologically adopts a positivist research philosophy, as it builds on existing literature to develop hypotheses that are empirically tested using quantitative data (Bell et al., 2022).

The study adopts a cross-sectional survey design, collecting quantitative data from multiple respondents at a single point in time (Bell et al., 2022). As this study uses cross-sectional survey data, the model estimates statistical associations rather than causal effects. The hypothesized directions are based on TPB and previous literature. Further, when this thesis refers to “drivers,” the term should be understood as theoretically specified predictors rather than causal determinants.

The survey was distributed through the data collection company Norstat to a sample representing the Swedish population. Furthermore, the survey was stimulus-based, incorporating elements from a real-world campaign. Given the study's aim to examine individuals' intentions rather than actual observed behaviors, the authors chose a campaign with demonstrated effectiveness in influencing real-world behavior as the stimulus, to increase the likelihood that intentions reflect realistic behavioral responses. The campaign was further relevant as it incentivizes individuals to dispose of takeaway waste in trash cans

in exchange for app-based rewards. By combining a clear behavioral objective with multi-channel exposure, it has demonstrated a strong impact in terms of consumer engagement, making it well-suited for this study.

The campaign has also received recognition in several national and international advertising competitions, including 100-wattaren and Guldägget, across categories related to advertising effectiveness and societal impact, such as activation, brand activism, and environmental sustainability (Guldägget, 2025; Sveriges Annonssörer, 2024).

In summary, because the study seeks to explain relationships in response to a real-world campaign, a quantitative stimulus-based survey design is appropriate.

3.2 Preparatory work

Prior to sending out the main study, pre-studies, including desktop research, unstructured interviews, and a pilot survey, were conducted to help construct and refine the main study.

3.2.1 Pre-study 1: Desktop research and interviews

Given the study's focus and context, the authors needed to gain a robust understanding of the nature of advertisements, their effects, and consumers' reactions to them. To facilitate this, the authors conducted comprehensive desktop research, in which academic literature, industry reports, and prior advertising materials were reviewed. This was complemented with three unstructured interviews with industry experts working in the advertising industry and having recent jury experience in advertising award competitions. They hold relevant knowledge and experience within the research topic.

The authors used unstructured interviews to explore the advertising industry in relation to the research topic. The interviews were non-directive in the sense that the interviewees were given the opportunity to talk freely about beliefs, experiences, and events within the specified research area (Saunders et al., 2012). Insights were used to refine the research focus and evaluate the relevance of the constructs, as well as to identify and validate potential advertising cases. Building on these insights, the authors selected McDonald's "Deal with the trash" campaign as the survey stimulus. To stimulate a realistic exposure scenario, five campaign elements (See Appendix 1) were included in the survey.

3.2.2 Pre-study 2: Pilot study

A second pre-study was conducted to test the preliminary version of the questionnaire, with the purpose of further refining it, ensuring that respondents would have no problems answering the questions and that no major issues would arise during data collection. Additionally, it enabled the authors to assess the questions' validity and the considerable certainty of the data collected (Saunders et al., 2012).

The pilot further allowed the authors to evaluate the clarity, reliability, and relevance of the constructs and measurements included in the study. Completed questionnaires were reviewed to ensure that respondents correctly understood the questions and survey instructions. Unstructured interviews were held, allowing respondents to freely discuss their experience and understanding of the survey.

Following the advice of Bell (2010), aspects such as completion time, clarity of instructions, ambiguous questions, and questionnaire layout were evaluated. The pilot also helped assess the appropriateness of the campaign elements used as survey stimuli, through respondents' feedback. The pilot survey was distributed to 20 respondents. This was considered sufficient given the study's research objectives and the questionnaire's initial quality. Saunders et al. (2012) further state that a minimum of 10 respondents is generally sufficient for most student pilot surveys.

Feedback from pilot participants led to minor revisions to the questionnaire's wording, structure, and design, improving overall comprehension. Further, a 45-second timer was added to the campaign video element to ensure respondents viewed the material before proceeding. Together, these adjustments strengthened the quality and practical relevance of the final questionnaire. Finally, the internal reliability consistency of the constructs was assessed and ensured to meet the criteria, using Cronbach's alpha (See Appendix 2).

3.3 Main study

3.3.1 Survey design

The primary research method employed in this study was a survey design, chosen for its effectiveness in examining behaviors, particularly consumer intention (Easterby-Smith et al.,

2021). A self-administered online questionnaire was used to efficiently collect data from a large sample while reducing interviewer bias and social desirability effects (Bell et al., 2022). Given the Swedish context of the study, the questionnaire was administered in Swedish to ensure clarity and minimize misinterpretation. The items were later translated into English for presentation, which may create minor nuances in wording.

The questionnaire, generated in Qualtrics, consisted of eleven sections. The number of sections was chosen to ensure respondents remained engaged without any section feeling too long. The first section included an introduction, including estimated time of completion, contact information, consent (in accordance with GDPR), and screening criteria (age 18+ and residence in Sweden). The second section presented information about the campaign together with campaign stimulus, including a 45-second video with a timer to increase the likelihood of exposure, along with four additional campaign images.

The third section included an attention check, ensuring respondents viewed and understood the campaign. Only one attention question was included, as frequent survey participants may develop response patterns that reduce the effectiveness of such checks. Sections four to six measured the TPB constructs, attitudes, subjective norms, and PBC. Section seven assessed PIA, including a reminder regarding campaign rewards, ensuring respondents could answer the questions correctly. The next section focused on intentions to engage in the campaign, including questions about respondents' behavioral intention and behavioral expectation.

Sections nine and ten examined attitudes toward McDonald's and the campaign. The final section included environmental concern and demographic variables (age, income, location, gender, education, and occupation), followed by a thank-you message and redirection link for Norstat's respondents to get their participation reward. The full questionnaire is provided in Appendix 3.

3.3.2 Questionnaire measures

The questionnaire measures were adopted from previous literature within sustainability and advertising research. In the following section, the sources, definitions of each construct, and questions are presented. All items in each construct were tested for reliability, using

Cronbach's alpha. Further, questions were answered using adapted 7-point Likert scales, which are commonly applied in marketing (Malhotra, 2019) and TPB research.

3.3.2.1 Attitude

In TPB, attitude refers to “the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question” (Ajzen, 1991, p. 188). Using this definition, items were adapted from Hauslbauer et al. (2022), Lim et al. (2024), and Sanne & Wiese (2018), combining literature related to advertising and sustainability. The question read: “In the near future, disposing of takeaway waste in a bin and scanning it with the McDonald's app to receive a reward is (for me)…” with the answer scales “Not desirable–Desirable”, “Negative–Positive”, “A bad idea–A good idea” and “Not beneficial–Beneficial”.

3.3.2.2 Subjective Norms

Subjective norms are individuals' perceptions of social expectations regarding whether a behavior should or should not be performed. They are commonly measured by asking respondents to rate the extent to which “important others” would approve or disapprove of them performing a given behavior (Ajzen, 1991). Using this definition, items were adapted from Hauslbauer et al. (2022), Paul et al. (2016), and Sanne & Wiese (2018), combining literature related to advertising and sustainability. Some items were adapted to focus on “important others” to align with Ajzen's (1991) definition.

The questions “People who are important to me would support my decision to dispose of takeaway waste in a bin and scan it with the McDonald's app to receive a reward in the near future”, “People who are important to me would think it is a good idea if I dispose of takeaway waste in a bin and scan it with the McDonald's app to receive a reward in the near future”, “People who are important to me would consider it desirable if I dispose of takeaway waste in a bin and scan it with the McDonald's app to receive a reward in the near future” and “People who are important to me think that I should dispose of takeaway waste in a bin and scan it with the McDonald's app to receive a reward in the near future” were answered on a scale ranging from “Strongly disagree” to “Strongly agree”.

3.3.2.3 Perceived Behavioral Control

PBC captures individuals' assessments of how manageable it would be to carry out a particular behavior. These assessments are informed by prior experience and expectations regarding potential barriers or constraints (Ajzen, 1991). Using this definition, items were adapted from Chu et al. (2016), Hauslbauer et al. (2022), Paul et al. (2016), and Sanne & Wiese (2018), combining literature related to advertising and sustainability.

The questions "Disposing of takeaway waste in a bin and scanning it with the McDonald's app to receive a reward in the near future would be easy for me", "I have the time and resources required to dispose of takeaway waste in a bin and scan it with the McDonald's app to receive a reward in the near future" and "I believe that I have the ability to dispose of takeaway waste in a bin and scan it with the McDonald's app to receive a reward in the near future" were answered on a scale ranging from "Strongly disagree" to "Strongly agree".

3.3.2.4 Environmental concern

Environmental concern refers to the degree to which individuals believe that environmental issues are important to societal welfare and reflects a value orientation toward the natural environment, including awareness of environmental threats (Kamalanon et al., 2022; Saari et al., 2021). Using this definition, items were adapted from Cao Minh & Nguyen Thi Quynh (2024), Hauslbauer et al. (2022), and Paul et al. (2016). The questions "I am very concerned about the environment", "I am willing to reduce my consumption to help protect the environment" and "Stricter environmental regulations are necessary to protect nature" were answered on a scale ranging from "Strongly disagree" to "Strongly agree".

3.3.2.5 Perceived Incentive Attractiveness

While not having an exact definition, PIA has been proven to be a valuable measure since individuals' responses to incentives depend on the perceived attractiveness of the reward rather than its objective value, as evaluations of incentives are inherently subjective (Wirtz et al., 2019). The authors use this source, along with the general definition of incentives, to validate the items. In general, incentives can be defined as external rewards used to influence individuals' behaviors (Bruers, 2024).

The items were adapted from Gong et al. (2023), McCall (2009), Wang et al. (2020), and Wirtz et al. (2019). The questions "Being offered a deal in the McDonald's app makes me

more likely to participate in this campaign”, “I do not mind scanning my waste to receive a deal in the McDonald’s app” and “The deals I can receive through this campaign are very attractive to me” were answered on a scale ranging from “Strongly disagree” to “Strongly agree”.

3.3.2.6 Advertising attitude

Advertising attitude is defined as “consumers’ favorable or unfavorable responses to a particular advertisement based on various advertisement factors” (Lee et al., 2017, para. 11). Using this definition, items were adapted from Balaskas et al. (2023), Mitchell & Olson (1981), and Saadeghvaziri et al. (2013).

The first question, “Do you like this campaign?” was answered on a scale ranging from “I do not like this campaign” to “I like this campaign”. The second question, “Do you find this campaign interesting?” was answered on a scale from “I do not find this campaign interesting” to “I find this campaign interesting”. The final question, “I have a positive attitude toward the campaign” was answered on a scale ranging from “Strongly disagree” to “Strongly agree”.

3.3.2.7 Brand attitude

Brand attitude refers to consumers’ positive or negative evaluations of a brand, encompassing both their cognitive recognition and emotional responses (Lee et al., 2017). Similarly, it has been described as consumers’ willingness to engage repeatedly with a brand, reflecting their overall positive or negative disposition toward it (Salehzadeh & Pool, 2017). Using this definition, items were adapted from Davtyan & Cunningham (2017) and Mitchell & Olson (1981).

The first question, “What do you think about McDonald’s as a brand?” was answered on a scale ranging from “I think very poorly of McDonald’s” to “I think very highly of McDonald’s”. The second question, “What do you think about McDonald’s compared to similar competitors?” was answered on a scale ranging from “McDonald’s is not as good as competing brands” to “McDonald’s is better than competing brands”. The final question, “To what extent does the following statement apply to you? McDonald’s has products that I would like to try” was answered on a scale ranging from “Does not apply at all” to “Fully

applies”. While this item captures respondents’ behavioral inclination toward the brand, it is included to reflect the conative dimension of brand attitude.

3.3.2.8 Behavioral intention

Behavioral intention refers to the extent to which individuals consciously plan and are willing to exert effort to perform or refrain from performing a specific behavior in the future (Ajzen, 1991; Warshaw & Davis, 1985). Using this definition, items were adapted from Sanne & Wiese (2018), Tercia & Teichert (2016), and Warshaw & Davis (1985), providing a mix of literature with a focus on both advertising, sustainability, and incentives.

Behavioral intention is a central construct within TPB and is therefore important to capture explicitly. However, the authors note that the term “intention” may be subject to varying interpretations among respondents. To mitigate this potential ambiguity, the items for this construct were formulated in a concrete behavioral context, clearly specifying the action and time frame of the behavior, therefore reducing the reliance on abstract interpretations of the term itself. While some degree of interpretation cannot be ruled out, this approach to measuring intention is consistent with prior research that used similar items.

The questions “I have a strong intention to dispose of takeaway waste in a bin and scan it with the McDonald’s app to receive a reward in the near future” and “I intend to dispose of takeaway waste in a bin and scan it with the McDonald’s app to receive a reward in the near future” were answered on a scale ranging from “Strongly disagree” to “Strongly agree”. The final question, “Indicate your intention to dispose of takeaway waste in a bin and scan it with the McDonald’s app to receive a reward in the near future” was answered on a scale ranging from “Not at all my intention” to “Very much my intention”.

3.3.2.9 Behavioral expectation

Behavioral expectation reflects an individual’s estimation of the likelihood that they will actually perform a specified behavior (Warshaw & Davis, 1985). Using this definition, items were adapted from Paul et al. (2016), Sia et al. (2024), Tercia & Teichert (2016), and Warshaw & Davis (1985), providing a mix of literature with a focus on both advertising, sustainability, and incentives.

The questions “In the near future, I will probably dispose of takeaway waste in a bin and scan it with the McDonald’s app to receive a reward” and “I expect that in the near future I will dispose of takeaway waste in a bin and scan it with the McDonald’s app to receive a reward” were answered on a scale ranging from “Strongly disagree” to “Strongly agree”. The final question, “How likely is it that you will actually dispose of takeaway waste in a bin and scan it with the McDonald’s app to receive a reward in the near future?” was answered on a scale ranging from “Unlikely” to “Likely”.

3.3.3 Sampling and data collection

The target population of this study consisted of Swedish residents aged 18 and above, primarily for ethical reasons. Data were collected through a sample recruited via Norstat’s consumer panel, with respondents completing a survey administered using Qualtrics. A non-probability quota sampling approach was employed to obtain a sample reflecting the population’s relative distribution across key demographic categories, such as age and gender (Bell et al., 2022). The aim was to collect 500 respondents representing these groups within Sweden.

Data collection took place between March 16 and March 23, 2026. In total, $N = 540$ respondents participated in the study. Of these, $n = 113$ responses were excluded based on predefined screening criteria, resulting in a final data set of $N = 427$ respondents. The exact criteria are presented in Table 1. Additionally, the authors compiled a comprehensive demographic profile of the final sample to characterize the respondents and provide context for the findings of this research (See Appendix 4).

Original sample population	540
Incomplete survey	-13
Answers not consenting (either not consent, not above 18 or not living in Sweden)	-7
Answers failing attention check	-68
Casewise deletion	-25
Final data set	427

Table 1: Data cleaning process

3.3.4 Analytical instrument

The collected data were analyzed using the statistical software application SmartPLS, applying Partial Least Squares Structural Equation Modeling (PLS-SEM). PLS-SEM is particularly suitable for studies with smaller sample sizes, complex models, and research objectives focused on developing theory and identifying key driving factors, making it well-suited to this study (Hair et al., 2021).

The analysis was conducted through a systematic, multi-step procedure following the established structure proposed by Hair et al. (2021), including the assessment of both the reflective measurement model and the structural model. After data cleaning, indicator reliability was assessed by examining the outer loadings of the indicators. Internal consistency reliability was evaluated using Cronbach's alpha and composite reliability. Convergent validity was assessed through the Average Variance Extracted (AVE), while discriminant validity was evaluated using both the Fornell-Larcker criterion and cross-loadings.

The structural model was assessed by first conducting a collinearity analysis of the inner model using Variance Inflation Factors (VIF). Next, the relevance and significance of the structural model relationships were evaluated by examining the path coefficients. Each hypothesis was systematically tested, focusing on the path coefficients and significance levels. The significance of these relationships was tested using bootstrapping with 5000 subsamples, with a 95% confidence interval. In addition, total effects were analyzed to provide a more comprehensive understanding of the structural model relationships. Finally,

the explanatory power of the models was assessed by examining the coefficient of determination (R^2) of the constructs.

3.4 Critical review of data quality

The assessment of data quality is based on a model that includes both behavioral intention and behavioral expectation, if not stated otherwise. This approach is adopted as these evaluations relate to the measurement properties of the constructs rather than the structural relationships between them. However, minor variations may arise when estimating separate models with either behavioral intentions or behavioral expectations as the dependent variables, as PLS-SEM produces model-specific estimates that are influenced by the overall model specification. For transparency, the corresponding results from the separate models are presented in Appendices 5-10.

3.4.1 Indicator reliability

Outer loadings are used to measure the indicator reliability. For reflective measurement models, outer loadings indicate the extent to which each observed item contributes to defining the underlying construct (Calvo-Mora et al., 2005). However, this only holds true if the outer loadings are significant. Further, a commonly used rule of thumb is that standardized outer loadings should be 0.708 or higher (Hair et al., 2017). As shown in Table 2, all items except EC4 and PBC4 are above the accepted value (>0.708) and significant ($p < 0.01$). Therefore, these are all included. EC4 and PBC4 were thus deleted to ensure that all items actually contribute to the construct. Appendix 11 shows the outer loadings after these items were removed. There are minimal differences in values after EC4 and PBC4 are removed, but all remain above 0.708 and are significant.

	Outer loadings
ADA1 <- ADVERTISING ATTITUDE	0.958***
ADA2 <- ADVERTISING ATTITUDE	0.942***
ADA3 <- ADVERTISING ATTITUDE	0.934***
ATT1 <- ATTITUDE	0.875***
ATT2 <- ATTITUDE	0.880***
ATT3 <- ATTITUDE	0.883***
ATT4 <- ATTITUDE	0.896***
BA1 <- BRAND ATTITUDE	0.928***
BA2 <- BRAND ATTITUDE	0.850***
BA3 <- BRAND ATTITUDE	0.915***
BE1 <- BEHAVIORAL EXPECTATION	0.988***
BE2 <- BEHAVIORAL EXPECTATION	0.992***
BE3 <- BEHAVIORAL EXPECTATION	0.987***
BI1 <- BEHAVIORAL INTENTION	0.984***
BI2 <- BEHAVIORAL INTENTION	0.986***
BI3 <- BEHAVIORAL INTENTION	0.981***
EC1 <- ENVIRONMENTAL CONCERN	0.855***
EC2 <- ENVIRONMENTAL CONCERN	0.906***
EC3 <- ENVIRONMENTAL CONCERN	0.856***
EC4 <- ENVIRONMENTAL CONCERN	0.640***
PBC1 <- PERCEIVED BEHAVIORAL CONTROL	0.893***
PBC2 <- PERCEIVED BEHAVIORAL CONTROL	0.903***
PBC3 <- PERCEIVED BEHAVIORAL CONTROL	0.912***
PBC4 <- PERCEIVED BEHAVIORAL CONTROL	0.654***
PIA1 <- PERCEIVED INCENTIVE ATTRACTIVENESS	0.914***
PIA2 <- PERCEIVED INCENTIVE ATTRACTIVENESS	0.832***
PIA3 <- PERCEIVED INCENTIVE ATTRACTIVENESS	0.919***
SN1 <- SUBJECTIVE NORMS	0.861***
SN2 <- SUBJECTIVE NORMS	0.942***
SN3 <- SUBJECTIVE NORMS	0.949***
SN4 <- SUBJECTIVE NORMS	0.918***

***P-value < 0.01

Table 2: Outer loadings

3.4.2 Internal Reliability

Cronbach's alpha is a widely used measure for assessing the internal consistency reliability of constructs, with values above 0.8 generally considered acceptable (Bell et al., 2022). However, Cronbach's alpha has been shown to underestimate reliability, which is why composite reliability is also measured to provide a more accurate assessment. In contrast, composite reliability (ρ_c) may overestimate reliability, suggesting that the true level of internal consistency likely lies between these values (ρ_a) (Hair et al., 2017). The measures share threshold guidelines, and as shown in Table 3, all constructs exceed the recommended level of 0.8, indicating good internal consistency.

It should, however, be noted that values above 0.95 may indicate that items within a construct are overly similar, potentially reflecting redundancy (Hair et al., 2017). In this study, the constructs behavioral intention and behavioral expectation exceed this threshold. While this suggests excellent internal consistency, it may also point to a high degree of similarity among the items. Nevertheless, given that these constructs are conceptually narrow and well-defined,

strong inter-item correlations can be expected and are therefore considered justifiable in this context.

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
ADVERTISING ATTITUDE	0.940	0.941	0.962
ATTITUDE	0.908	0.920	0.935
BEHAVIORAL EXPECTATION	0.989	0.989	0.993
BEHAVIORAL INTENTION	0.984	0.984	0.989
BRAND ATTITUDE	0.881	0.907	0.926
ENVIRONMENTAL CONCERN	0.875	0.902	0.922
PERCEIVED BEHAVIORAL CONTROL	0.898	0.919	0.936
PERCEIVED INCENTIVE ATTRACTIVENESS	0.865	0.874	0.918
SUBJECTIVE NORMS	0.938	0.944	0.956

Table 3: Internal Reliability

3.4.3 Convergent Validity

One of the most commonly used measures to assess convergent validity is the average variance extracted (AVE), which indicates the extent to which a construct explains the variance of its indicators on average. A threshold of 0.5 or higher is recommended, as this implies that the construct explains more than half of the variance in its indicators (Hair et al., 2017). As shown in Table 4, all AVE values exceed 0.5, indicating adequate convergent validity and that the constructs account for a substantial proportion of the variance in their respective indicators.

	Average Variance Extracted (AVE)
ADVERTISING ATTITUDE	0.893
ATTITUDE	0.782
BEHAVIORAL EXPECTATION	0.979
BEHAVIORAL INTENTION	0.968
BRAND ATTITUDE	0.807
ENVIRONMENTAL CONCERN	0.798
PERCEIVED BEHAVIORAL CONTROL	0.829
PERCEIVED INCENTIVE ATTRACTIVENESS	0.789
SUBJECTIVE NORMS	0.844

Table 4: Average Variance Extracted (AVE)

3.4.4 Discriminant validity

Discriminant validity is measured to evaluate the extent to which constructs are empirically distinct from other constructs in the structural model (Hair et al., 2021). Therefore, testing for discriminant validity is crucial for ensuring that the study's model does not show excessive overlap between measures of related constructs (Bell et al., 2022). In this study, Fornell-Larcker and cross-loadings are used to assess discriminant validity.

3.4.4.1 Fornell-Larcker

The Fornell-Larcker method is deemed suitable for assessing validity concerning reflective measures. This confirms whether the correlations between a construct and its indicators exceed its correlations with indicators of other constructs (Fornell & Larcker, 1981). As such, Table 5 shows values confirming discriminant validity as no indicator loads higher on another construct than on its intended construct.

	ADVERTISING ATTITUDE	ATTITUDE	BEHAVIORAL EXPECTATION	BEHAVIORAL INTENTION	BRAND ATTITUDE	ENVIRONMENTAL CONCERN	PERCEIVED BEHAVIORAL CONTROL	PERCEIVED INCENTIVE ATTRACTIVENESS	SUBJECTIVE NORMS
ADVERTISING ATTITUDE	0.945								
ATTITUDE	0.769	0.884							
BEHAVIORAL EXPECTATION	0.618	0.720	0.989						
BEHAVIORAL INTENTION	0.636	0.753	0.952	0.984					
BRAND ATTITUDE	0.465	0.486	0.575	0.552	0.898				
ENVIRONMENTAL CONCERN	0.334	0.267	0.216	0.221	0.040	0.894			
PERCEIVED BEHAVIORAL CONTROL	0.630	0.669	0.591	0.622	0.332	0.251	0.911		
PERCEIVED INCENTIVE ATTRACTIVENESS	0.716	0.807	0.831	0.858	0.558	0.253	0.682	0.888	
SUBJECTIVE NORMS	0.713	0.806	0.681	0.717	0.406	0.280	0.670	0.733	0.919

Table 5: Fornell-Larcker

3.4.4.2 Cross-loadings

The second method applied was cross-loadings, which compares the indicators' outer loadings, ensuring that they load higher on their corresponding construct than on any other construct in the model (Hair et al., 2017). Table 6 shows the results from analyzing cross-loadings, verifying discriminant validity for this study.

	ADVERTISING ATTITUDE	ATTITUDE	BRAND ATTITUDE	BEHAVIORAL EXPECTATION	BEHAVIORAL INTENTION	ENVIRONMENTAL CONCERN	PERCEIVED BEHAVIORAL CONTROL	PERCEIVED INCENTIVE ATTRACTIVENESS	SUBJECTIVE NORMS
ADA1	0.958	0.716	0.449	0.583	0.605	0.305	0.578	0.676	0.681
ADA2	0.942	0.711	0.464	0.604	0.615	0.308	0.585	0.684	0.643
ADA3	0.934	0.754	0.404	0.562	0.582	0.336	0.627	0.671	0.700
ATT1	0.639	0.876	0.459	0.729	0.755	0.276	0.593	0.765	0.703
ATT2	0.699	0.881	0.381	0.557	0.596	0.201	0.600	0.661	0.709
ATT3	0.734	0.883	0.365	0.516	0.552	0.272	0.601	0.635	0.730
ATT4	0.666	0.897	0.489	0.700	0.718	0.195	0.575	0.763	0.714
BA1	0.454	0.479	0.928	0.544	0.525	0.007	0.328	0.524	0.399
BA2	0.340	0.348	0.848	0.397	0.377	0.055	0.254	0.374	0.273
BA3	0.444	0.463	0.916	0.581	0.556	0.050	0.304	0.574	0.400
BE1	0.610	0.718	0.573	0.989	0.941	0.206	0.589	0.821	0.671
BE2	0.614	0.715	0.569	0.992	0.946	0.216	0.582	0.822	0.672
BE3	0.609	0.706	0.565	0.987	0.941	0.220	0.583	0.824	0.677
BI1	0.635	0.754	0.544	0.924	0.984	0.226	0.628	0.848	0.724
BI2	0.617	0.735	0.537	0.936	0.987	0.226	0.610	0.849	0.701
BI3	0.625	0.735	0.548	0.952	0.982	0.200	0.598	0.837	0.692
EC1	0.230	0.181	-0.012	0.160	0.164	0.872	0.134	0.193	0.172
EC2	0.312	0.254	0.056	0.233	0.245	0.928	0.276	0.252	0.287
EC3	0.341	0.269	0.050	0.175	0.171	0.880	0.239	0.224	0.274
PBC1	0.601	0.665	0.332	0.633	0.645	0.244	0.908	0.685	0.677
PBC2	0.558	0.588	0.302	0.504	0.540	0.181	0.914	0.586	0.573
PBC3	0.555	0.555	0.261	0.446	0.488	0.261	0.909	0.574	0.562
PIA1	0.635	0.730	0.540	0.767	0.789	0.217	0.547	0.914	0.639
PIA2	0.689	0.729	0.374	0.651	0.698	0.270	0.734	0.829	0.712
PIA3	0.596	0.697	0.558	0.787	0.796	0.195	0.559	0.919	0.616
SN1	0.630	0.726	0.327	0.544	0.583	0.249	0.586	0.648	0.862
SN2	0.714	0.765	0.391	0.618	0.656	0.252	0.621	0.674	0.942
SN3	0.666	0.753	0.384	0.653	0.680	0.287	0.652	0.689	0.949
SN4	0.615	0.724	0.384	0.674	0.707	0.241	0.604	0.683	0.919

Table 6: Cross-loadings

3.4.5 Variance Inflation Factor

To assess the models' viability, a collinearity analysis was conducted by examining the Variance Inflation Factors (VIF) of the predictor constructs. This is a common metric for evaluating indicator collinearity, analyzing whether the levels of collinearity are acceptable within the model. VIF values above 5 indicate critical collinearity issues, where the researchers should seek to reduce collinearity levels, while values between 3 and 5 suggest typically uncritical levels of collinearity. Values below 3 indicate no collinearity concerns (Hair et al., 2021).

The results show that all VIF values in the inner models are below the threshold of 5, indicating the absence of critical collinearity issues across both models. Specifically, four variables exhibit VIF values below 3, suggesting no collinearity concerns, while the remaining three variables fall within the range of 3 to 5, indicating uncritical and acceptable levels of collinearity.

	ADVERTISING ATTITUDE	ATTITUDE	BEHAVIORAL INTENTION	BRAND ATTITUDE	ENVIRONMENTAL CONCERN	PERCEIVED BEHAVIORAL CONTROL	PERCEIVED INCENTIVE ATTRACTIVENESS	SUBJECTIVE NORMS
ADVERTISING ATTITUDE			2.930	1.000				
ATTITUDE			4.513					
BEHAVIORAL INTENTION								
BRAND ATTITUDE			1.529					
ENVIRONMENTAL CONCERN		1.000	1.159					
PERCEIVED BEHAVIORAL CONTROL			2.213					
PERCEIVED INCENTIVE ATTRACTIVENESS			3.759					
SUBJECTIVE NORMS			3.322					

Table 7: Variance Inflation Factor (Behavioral intention as dependent variable)

	ADVERTISING ATTITUDE	ATTITUDE	BEHAVIORAL EXPECTATION	BRAND ATTITUDE	ENVIRONMENTAL CONCERN	PERCEIVED BEHAVIORAL CONTROL	PERCEIVED INCENTIVE ATTRACTIVENESS	SUBJECTIVE NORMS
ADVERTISING ATTITUDE			2.916	1.000				
ATTITUDE			4.418					
BEHAVIORAL EXPECTATION								
BRAND ATTITUDE			1.524					
ENVIRONMENTAL CONCERN		1.000	1.163					
PERCEIVED BEHAVIORAL CONTROL			2.236					
PERCEIVED INCENTIVE ATTRACTIVENESS			3.737					
SUBJECTIVE NORMS			3.306					

Table 8: Variance Inflation Factor (Behavioral expectation as dependent variable)

3.5 Ethical considerations

Throughout the research process, the authors emphasized ethical considerations in accordance with the EU's Ethics and Data Protection framework (European Commission, 2021). Additionally, respondents' rights and privacy were protected throughout the study. Respondents were informed about the study's purpose, the voluntary nature of participation, and the anonymity and confidentiality of their responses. No personally identifiable information was collected, and informed consent was obtained prior to participation. Individuals under the age of 18 were excluded, as children are considered a vulnerable group and may be less aware of the risks and consequences associated with the processing of personal data (Regulation (EU) 2016/679, 2016, Recital 38). These measures ensure both the protection of participants and the integrity of the research.

4. Results & Analysis

In the following section, the terms “effect,” “direct effect,” and “total effect” refer to statistical relationships estimated in the PLS-SEM model and should not be interpreted as evidence of causality.

Further, two models are analyzed and presented. These models are identical except for the dependent variable, where one uses behavioral intention and the other behavioral expectation. This distinction is motivated by the study’s aim to explore potential differences in how two similar intention variables are influenced by the same predictors. Both models are analyzed and discussed separately.

4.1 Path coefficients & Hypothesis testing

In this section, both groups of hypotheses presented in Section 2 will be tested, in each separate model. The hypotheses were tested using path coefficients, where positive and negative coefficients indicate the direction of the relationship and larger absolute values indicate stronger effects. Further, a 95% confidence interval was applied, meaning that p-values below 0.05 indicate statistical significance.

4.1.1 Hypothesis testing for the behavioral intention model

H1: Attitude toward the campaign behavior has a positive effect on behavioral intention.

The path coefficient between attitude and behavioral intention is positive but not statistically significant ($\beta = 0.091$, $p = 0.058$; $p > 0.05$). Therefore, attitude does not have a significant positive effect on behavioral intention. Thus, H1 is not supported.

H2: Subjective norms associated with the campaign behavior have a positive effect on behavioral intention.

The path coefficient between subjective norm and behavioral intention is positive and statistically significant ($\beta = 0.172$, $p = 0.000$; $p < 0.05$). Therefore, subjective norms have a significant positive effect on behavioral intention. Thus, H2 is supported.

H3: Perceived Behavioral Control associated with the campaign behavior has a positive effect on behavioral intention.

The path coefficient between PBC and behavioral intention is positive but not statistically significant ($\beta = 0.023$, $p = 0.544$; $p > 0.05$). Therefore, PBC does not have a significant positive effect on behavioral intention. Thus, H3 is not supported.

H4: Environmental concern has a positive effect on attitude toward the campaign behavior.

The path coefficient between environmental concern and attitude is positive and statistically significant ($\beta = 0.268$, $p = 0.000$; $p < 0.05$). Therefore, environmental concern has a significant positive effect on attitude. Thus, H4 is supported.

H5: Environmental concern has a positive effect on behavioral intention.

The path coefficient between environmental concern and behavioral intention is positive (barely) but not statistically significant ($\beta = 0.003$, $p = 0.891$; $p > 0.05$). Therefore, environmental concern does not have a significant positive effect on behavioral intention. Thus, H5 is not supported.

H6: Perceived Incentive Attractiveness has a positive effect on behavioral intention.

The path coefficient between PIA and behavioral intention is positive and statistically significant ($\beta = 0.639$, $p = 0.000$; $p < 0.05$). Therefore, PIA has a significant positive effect on behavioral intention. Thus, H6 is supported.

H7: Advertising attitude has a positive effect on brand attitude.

The path coefficient between advertising attitude and brand attitude is positive and statistically significant ($\beta = 0.465$, $p = 0.000$; $p < 0.05$). Therefore, advertising attitude has a significant positive effect on brand attitude. Thus, H7 is supported.

H8: Advertising attitude has a positive effect on behavioral intention.

The path coefficient between advertising attitude and behavioral intention is negative and statistically significant ($\beta = -0.083$, $p = 0.023$; $p < 0.05$). Therefore, advertising attitude has a significant negative effect on behavioral intention. Even though the relationship is statistically significant, the results are negative, while a positive effect was hypothesized. Thus, H8 is not supported.

H9: Brand attitude has a positive effect on behavioral intention.

The path coefficient between brand attitude and behavioral intention is positive and statistically significant ($\beta = 0.113$, $p = 0.001$; $p < 0.05$). Therefore, brand attitude has a significant positive effect on behavioral intention. Thus, H9 is supported.

H10: Brand attitude acts as a mediator between advertising attitude and behavioral intention.

The indirect effect of advertising attitude on behavioral intention through brand attitude is positive and statistically significant ($\beta = 0.053$, $p = 0.001$; $p < 0.05$), indicating that brand attitude mediates the relationship between advertising attitude and behavioral intention. Thus, H10 is supported. Further, since the direct effect between advertising attitude and behavioral intention is significant but negative, this suggests competitive partial mediation, where the direct and indirect effects operate in opposite directions.

Pathways	Hypothesis	Path coefficients	P values
Att → BI	H1	0.091	0.058
SN → BI	H2	0.172	0.000
PBC → BI	H3	0.023	0.544
EC → ATT	H4	0.268	0.000
EC → BI	H5	0.003	0.891
PIA → BI	H6	0.639	0.000
ADA → BA	H7	0.465	0.000
ADA → BI	H8	-0.083	0.023
BA → BI	H9	0.113	0.001
<i>Indirect effects</i>			
ADA → BA → BI	H10	0.053	0.001

Table 9: Hypothesis table (Behavioral intention as dependent variable)

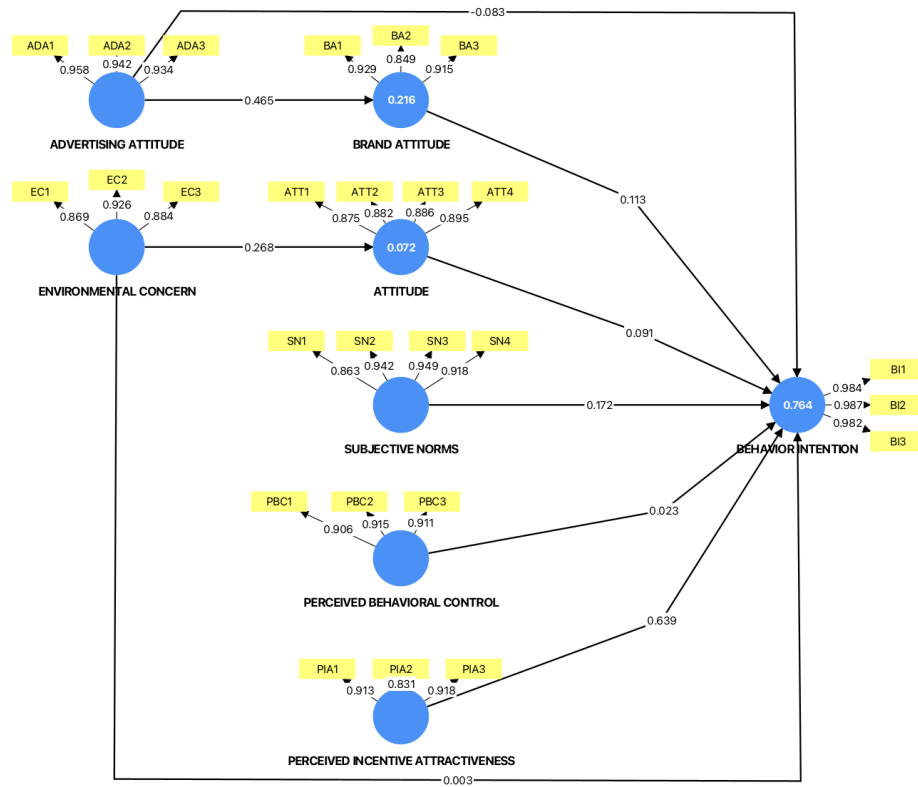


Figure 4: Behavioral intention model

4.1.2 Hypothesis testing for the behavioral expectation model

H1^{BE}: Attitude toward the campaign behavior has a positive effect on behavioral expectation.

The path coefficient between attitude and behavioral expectation is positive but not statistically significant ($\beta = 0.064$, $p = 0.218$; $p > 0.05$). Therefore, attitude does not have a significant positive effect on behavioral expectation. Thus, *H1^{BE}* is not supported.

H2^{BE}: Subjective norms associated with the campaign behavior have a positive effect on behavioral expectation.

The path coefficient between subjective norms and behavioral expectation is positive and statistically significant ($\beta = 0.149$, $p = 0.002$; $p < 0.05$). Therefore, subjective norms have a significant positive effect on behavioral expectation. Thus, *H2^{BE}* is supported.

H3^{BE}: Perceived Behavioral Control associated with the campaign behavior has a positive effect on behavioral expectation.

The path coefficient between PBC and behavioral expectation is positive but not statistically significant ($\beta = 0.019$, $p = 0.600$; $p > 0.05$). Therefore, PBC does not have a significant positive effect on behavioral expectation. Thus, *H3^{BE}* is not supported.

H4^{BE}: Environmental concern has a positive effect on attitude toward the campaign behavior.

The path coefficient between environmental concern and attitude is positive and statistically significant ($\beta = 0.265$, $p = 0.000$; $p < 0.05$). Therefore, environmental concern has a significant positive effect on attitude. Thus, *H4^{BE}* is supported.

H5^{BE}: Environmental concern has a positive effect on behavioral expectation.

The path coefficient between environmental concern and behavioral expectation is positive but not statistically significant ($\beta = 0.017$, $p = 0.509$; $p > 0.05$). Therefore, environmental concern does not have a significant positive effect on behavioral expectation. Thus, *H5^{BE}* is not supported.

H6^{BE}: Perceived Incentive Attractiveness has a positive effect on behavioral expectation.

The path coefficient between PIA and behavioral expectation is positive and statistically significant ($\beta = 0.605$, $p = 0.000$; $p < 0.05$). Therefore, PIA has a significant positive effect on behavioral expectation. Thus, *H6^{BE}* is supported.

H7^{BE}: Advertising attitude has a positive effect on brand attitude.

The path coefficient between advertising attitude and brand attitude is positive and statistically significant ($\beta = 0.464$, $p = 0.000$; $p < 0.05$). Therefore, advertising attitude has a significant positive effect on brand attitude. Thus, *H7^{BE}* is supported.

H8^{BE}: Advertising attitude has a positive effect on behavioral expectation.

The path coefficient between advertising attitude and behavioral expectation is negative and not statistically significant ($\beta = -0.068$, $p = 0.092$; $p > 0.05$). Therefore, advertising attitude has a non-significant negative effect on behavioral expectation. Thus, *H8^{BE}* is not supported.

H9^{BE}: Brand attitude has a positive effect on behavioral expectation.

The path coefficient between brand attitude and behavioral expectation is positive and statistically significant ($\beta = 0.172$, $p = 0.000$; $p < 0.05$). Therefore, brand attitude has a significant positive effect on behavioral expectation. Thus, *H9^{BE}* is supported.

$H10^{BE}$: Brand attitude acts as a mediator between advertising attitude and behavioral expectation.

The indirect effect of advertising attitude on behavioral expectation through brand attitude is positive and statistically significant ($\beta = 0.080$, $p = 0.000$; $p < 0.05$), indicating that brand attitude mediates the relationship between advertising attitude and behavioral expectation. Thus, $H10^{BE}$ is supported. Since the direct effect between advertising attitude and behavioral expectation is non-significant and negative, this suggests full mediation, where the influence of advertising attitude on behavioral expectation is transmitted entirely through brand attitude.

Pathways		Hypothesis	Path coefficients	P values
ATT →	BE	$H1^{BE}$	0.064	0.218
SN →	BE	$H2^{BE}$	0.149	0.002
PBC →	BE	$H3^{BE}$	0.019	0.600
EC →	ATT	$H4^{BE}$	0.265	0.000
EC →	BE	$H5^{BE}$	0.017	0.509
PIA →	BE	$H6^{BE}$	0.605	0.000
ADA →	BA	$H7^{BE}$	0.464	0.000
ADA →	BE	$H8^{BE}$	-0.068	0.092
BA →	BE	$H9^{BE}$	0.172	0.000
<i>Indirect effects</i>				
ADA → BA →	BE	$H10^{BE}$	0.080	0.000

Table 10: Hypothesis table (Behavioral expectation as dependent variable)

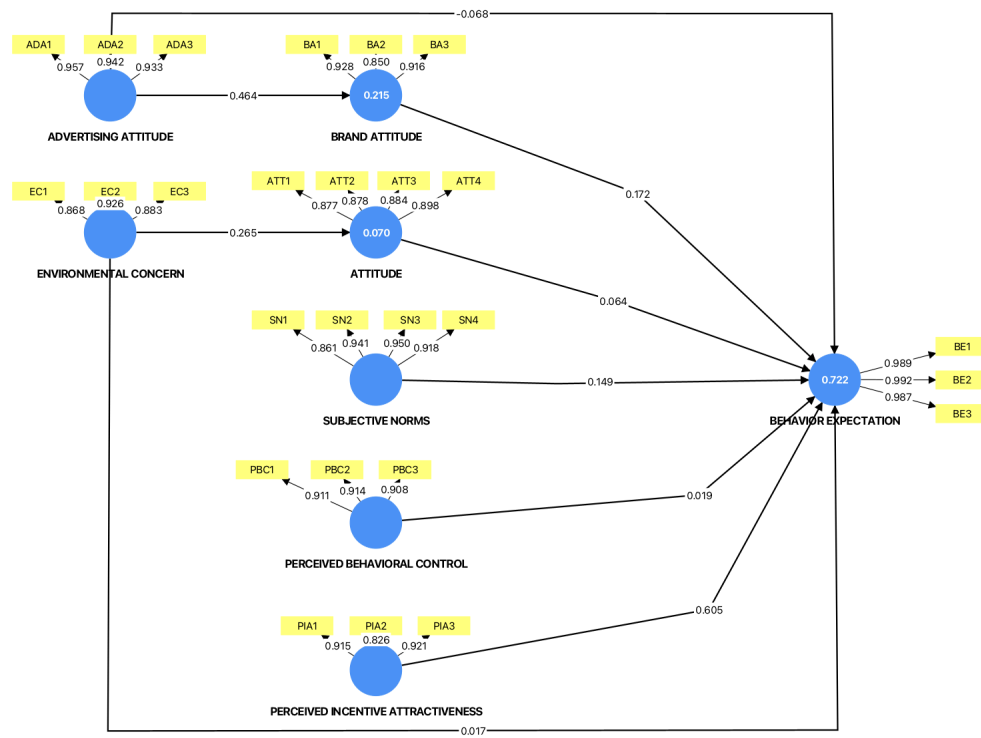


Figure 5: Behavioral expectation model

4.1.3 Summary of hypothesis testing

Relationship	Hypothesis	Result
H1. Att → BI	<i>H1: Attitude toward the campaign behavior has a positive effect on behavioral intention.</i>	Not supported
H2. SN → BI	<i>H2: Subjective norms associated with the campaign behavior have a positive effect on behavioral intention.</i>	Supported
H3. PBC → BI	<i>H3: Perceived Behavioral Control associated with the campaign behavior has a positive effect on behavioral intention.</i>	Not supported
H4. EC → Att	<i>H4: Environmental concern has a positive effect on attitude toward the campaign behavior.</i>	Supported
H5. EC → BI	<i>H5: Environmental concern has a positive effect on behavioral intention.</i>	Not supported
H6. PIA → BI	<i>H6: Perceived Incentive Attractiveness has a positive effect on behavioral intention.</i>	Supported
H7. ADA → BA	<i>H7: Advertising attitude has a positive effect on brand attitude.</i>	Supported
H8. ADA → BI	<i>H8: Advertising attitude has a positive effect on behavioral intention</i>	Not supported*
H9. BA → BI	<i>H9: Brand attitude has a positive effect on behavioral intention.</i>	Supported
H10. ADA → BA → BI	<i>H10: Brand attitude acts as a mediator between advertising attitude and behavioral intention.</i>	Supported
H1 ^{BE} . Att → BE	<i>H1^{BE}: Attitude toward the campaign behavior has a positive effect on behavioral expectation.</i>	Not supported
H2 ^{BE} . SN → BE	<i>H2^{BE}: Subjective norms associated with the campaign behavior have a positive effect on behavioral expectation.</i>	Supported
H3 ^{BE} . PBC → BE	<i>H3^{BE}: Perceived Behavioral Control associated with the campaign behavior has a positive effect on behavioral expectation.</i>	Not supported
H4 ^{BE} . EC → Att	<i>H4^{BE}: Environmental concern has a positive effect on attitude toward the campaign behavior.</i>	Supported
H5 ^{BE} . EC → BE	<i>H5^{BE}: Environmental concern has a positive effect on behavioral expectation.</i>	Not supported
H6 ^{BE} . PIA → BE	<i>H6^{BE}: Perceived Incentive Attractiveness has a positive effect on behavioral expectation.</i>	Supported
H7 ^{BE} . ADA → BA	<i>H7^{BE}: Advertising attitude has a positive effect on brand attitude.</i>	Supported
H8 ^{BE} . ADA → BE	<i>H8^{BE}: Advertising attitude has a positive effect on behavioral expectation.</i>	Not supported
H9 ^{BE} . BA → BE	<i>H9^{BE}: Brand attitude has a positive effect on behavioral expectation.</i>	Supported
H10 ^{BE} . ADA → BA → BE	<i>H10^{BE}: Brand attitude acts as a mediator between advertising attitude and behavioral expectation.</i>	Supported
*Relationship is significant but in opposite direction.		

Table 11: Summary of hypothesis testing

4.2 Total effects

For the model using behavioral intention as the dependent variable, all total effects are significant except where advertising attitude, attitude, environmental concern, and PBC are independent variables. Overall, these findings are largely consistent with the path coefficient results. However, differences emerge for relationships containing both direct and indirect effects, as total effects capture both. Most notably, the relationship between advertising attitude and behavioral intention becomes non-significant for total effects, despite the direct and indirect effects being significant. This occurs because the direct effect of advertising attitude on behavioral intention is negative, while the indirect effect through brand attitude is positive. Consequently, the effects partially offset each other, resulting in a slightly negative and non-significant total effect.

When testing the model using behavioral expectation as the dependent variable, the results are similar. However, the total effect of advertising attitude differs slightly between the models, being slightly negative for behavioral intention but slightly positive for behavioral expectation, although non-significant in both cases. This difference is explained by variations in the strength and significance of the negative direct effect and the positive indirect effect through brand attitude across the two models.

	ADVERTISING ATTITUDE	ATTITUDE	BEHAVIORAL INTENTION	BRAND ATTITUDE	ENVIRONMENTAL CONCERN	PERCEIVED BEHAVIORAL CONTROL	PERCEIVED INCENTIVE ATTRACTIVENESS	SUBJECTIVE NORMS
ADVERTISING ATTITUDE			-0.030 (p = 0.421)	0.465 (p = 0.000)				
ATTITUDE			0.091 (p = 0.058)					
BEHAVIORAL INTENTION								
BRAND ATTITUDE			0.113 (p = 0.001)					
ENVIRONMENTAL CONCERN		0.268 (p = 0.000)	0.028 (p = 0.354)					
PERCEIVED BEHAVIORAL CONTROL			0.023 (p = 0.544)					
PERCEIVED INCENTIVE ATTRACTIVENESS			0.639 (p = 0.000)					
SUBJECTIVE NORMS			0.172 (p = 0.000)					

Table 12: Total effects (Behavioral intention as dependent variable)

	ADVERTISING ATTITUDE	ATTITUDE	BEHAVIORAL EXPECTATION	BRAND ATTITUDE	ENVIRONMENTAL CONCERN	PERCEIVED BEHAVIORAL CONTROL	PERCEIVED INCENTIVE ATTRACTIVENESS	SUBJECTIVE NORMS
ADVERTISING ATTITUDE			0.012 (p = 0.777)	0.464 (p = 0.000)				
ATTITUDE			0.064 (p = 0.218)					
BEHAVIORAL EXPECTATION								
BRAND ATTITUDE			0.172 (p = 0.000)					
ENVIRONMENTAL CONCERN		0.265 (p = 0.000)	0.034 (p = 0.278)					
PERCEIVED BEHAVIORAL CONTROL			0.019 (p = 0.600)					
PERCEIVED INCENTIVE ATTRACTIVENESS			0.605 (p = 0.000)					
SUBJECTIVE NORMS			0.149 (p = 0.002)					

Table 13: Total effects (Behavioral expectation as dependent variable)

4.3 Coefficient of Determination R^2

R^2 represents the proportion of variance explained in each outcome construct and serves as an indicator of the model's explanatory power. As a general guideline, R^2 values of 0.75, 0.50, and 0.25 are typically interpreted in social science contexts as substantial, moderate, and weak, respectively. Nonetheless, this differs greatly depending on the context, and therefore, no general rule of thumb can be established. A key limitation of R^2 is that it generally increases with the inclusion of additional explanatory variables, regardless of their actual contribution to the model. To address this, adjusted R^2 incorporates a correction for the number of predictors in relation to the sample size, offering a more conservative and reliable estimate of explanatory power (Hair et al., 2021). As shown in Table 14 and 15, behavioral intention and behavioral expectation can be greatly explained by the variables, with behavioral intention even showing a substantial explanation. Brand attitude is weakly explained, while attitude is barely explained. Nonetheless, this is predicted since attitude and brand attitude only have one variable each explaining them in the model.

	R-square	R-square adjusted
ATTITUDE	0.072	0.070
BEHAVIORAL INTENTION	0.764	0.761
BRAND ATTITUDE	0.216	0.215

Table 14: R-squared (Behavioral intention as dependent variable)

	R-square	R-square adjusted
ATTITUDE	0.070	0.068
BEHAVIORAL EXPECTATION	0.722	0.717
BRAND ATTITUDE	0.215	0.213

Table 15: R-squared (Behavioral expectation as dependent variable)

5. Discussion

In this section, the findings and results from the hypothesis testing will be discussed. Each construct appears in the same order as they are presented in the theory section, including a discussion of the hypotheses from both dependent variables. To make it easier for the reader, the authors use the term “intention” when referring to behavioral intention and behavioral expectation together.

5.1 Attitude

Contrary to several previous studies using TPB, attitude toward the campaign behavior was not significantly associated with intention. This is a notable finding, as attitude is often identified as one of the strongest predictors of intention in both sustainability and advertising contexts (Amarullah & Handriana, 2023; Chu et al., 2016; De Groot & Steg, 2007; Lim et al., 2024; Paul et al., 2016; Sanne & Wiese, 2018; Wang & Li, 2022; Zaremohzzabieh et al., 2021). Although some studies have also reported non-significant relationships (Xu et al., 2020), indicating that TPB may be even more context dependent than previously assumed.

One possible explanation is the well-documented attitude-behavior, or “say-do” gap (Zaikauskaitė et al., 2023). In sustainability contexts, this gap may be especially pronounced because environmentally friendly attitudes are often socially desirable, meaning individuals may express positive attitudes without intending to act accordingly (Kotzya et al., 2024). At the same time, most previous sustainability research still finds attitude to be a significant predictor of intention. This may suggest that the behavior in this study is perceived as particularly socially desirable, strengthening the say-do gap further. Another explanation is that other factors in the model override the effect of attitude, which seems plausible given the very strong effect of PIA.

5.2 Subjective norms

Subjective norms have been shown to affect intention in both sustainability and advertising contexts, although usually not as the strongest predictor. In this study, subjective norms is positively associated with intention, supporting previous sustainability research (De Groot & Steg, 2007; Kotzya et al., 2024; Wang & Li, 2022; Zaremohzzabieh et al., 2021) and Ajzen’s

(1991) original theory stating that people are expected to care and shape their intentions after what their “important others” think.

However, the relationship was considerably stronger than in previous research, making subjective norms the second strongest predictor after PIA. This may reflect Sweden’s high environmental awareness (Swedish Environmental Protection Agency, 2024), where individuals are likely to perceive sustainable behavior as socially supported or expected. In sustainability contexts, people are more likely to engage in behaviors they believe important others approve of (Khan et al., 2019). Interestingly, environmental concern itself was not significantly associated with intention, suggesting that social influence may matter more than individuals’ own environmental beliefs.

Moreover, the behavior in this study is tied not only to sustainability but also to engagement with a specific campaign and brand. Subjective norms may therefore reflect both perceived pressure to act sustainably and perceived approval of interacting with the campaign and receiving the reward. This aligns with previous advertising research showing that subjective norms influence engagement with brands and campaigns (Amarullah & Handriana, 2023; Chu et al., 2016; Lim et al., 2024; Sanne & Wiese, 2018), suggesting that individuals are more likely to engage with brands and campaigns they believe are socially supported by people around them. In this context, social approval may also extend to the reward itself, where receiving incentives for a small sustainable action is viewed positively by others. This may further strengthen the role of PIA in explaining intention.

5.3 Perceived Behavioral Control

Research suggests that PBC is a strong predictor of intention in both sustainability and advertising contexts (Amarullah & Handriana, 2023; Chu et al., 2016; De Groot & Steg, 2007; Kotyza et al., 2024; Lim et al., 2024; Paul et al., 2016; Wang & Li, 2022; Xu et al., 2020; Zaremohzzabieh et al., 2021). However, the findings in this study differ from this pattern, as PBC was not significantly associated with intention.

One possible explanation is that the behavior may be perceived as inconvenient, which could weaken the influence of PBC (Wang & Li, 2022). However, this seems unlikely given the demographic profile of the sample, as respondents generally appear to have easy access to the

resources required to perform the behavior, such as trash cans and mobile applications. The behavior should therefore not be perceived as particularly difficult.

Instead, the findings echo a previous advertising study, where PBC has also shown non-significant effects (Sanne & Wiese, 2018). A plausible explanation is that most respondents already perceive themselves as fully capable of performing the behavior. As a result, PBC levels become uniformly high, creating limited variation between individuals and reducing its explanatory power in predicting intention.

5.4 Environmental concern

In previous studies, environmental concern was identified as a predictor of intention (Kamalanon et al., 2022; Kotyza et al., 2024; Paul et al., 2016), which is why it was added to the model of TPB, intending to capture the environmental context. However, in this study, environmental concern was not significantly associated with intention. One possible explanation is that individuals may be driven more by self-interest than by environmental concern in certain contexts (Saari et al., 2021). This appears particularly relevant in the present study, where PIA emerged as the strongest predictor of intention. The findings therefore suggest that attractive rewards may outweigh environmental concern in motivating engagement. It has earlier been suggested that a lack of perceived benefit with an action can lead to lower engagement even if environmental concern is high (Wang & Li, 2022).

At the same time, environmental concern was significantly and positively associated with attitude toward the campaign behavior, supporting previous research (De Groot & Steg, 2007; Emekci, 2019; Paul et al., 2016; Wang & Li, 2022). One explanation may be that environmentally concerned individuals view the campaign positively because it encourages more people to behave sustainably. However, while they may already perform the sustainable behavior itself, such as disposing of trash properly, this does not necessarily mean they want to engage with the campaign or brand. Instead, they may appreciate the campaign because they believe it can motivate others to act more sustainably, particularly through the use of attractive incentives. However, the incentives may not be perceived as attractive enough for them, or they may simply not like the brand.

5.5 Perceived Incentive Attractiveness

The results demonstrate that PIA is significantly and positively associated with intention. It serves as a strong predictor of individuals' intentions to engage in incentivized environmental sustainability campaigns, reinforcing previous literature emphasizing its effectiveness in motivating actions (Bandhu et al., 2024; Barile et al., 2015; Bucchiarone et al., 2023; Gneezy et al., 2011; Mahmoodi et al., 2020).

Further, incentives tend to have a stronger impact in situations characterized by lower involvement (Gong et al., 2023), where individuals rely more on external motivators rather than pre-existing attitudes. This is reflected in the present study, where the campaign behavior can be characterized as low involvement and where the relationship between attitude toward the behavior and intention is non-significant. Together, these findings indicate that PIA may be compensating for weaker attitudinal drivers, as individuals appear to be less driven by internal evaluations of the behavior and more by external rewards. It may also be that PIA overrides the attitudinal drivers. Previous literature has highlighted the risk of crowding-out effects, where external rewards may undermine intrinsic motivation over time (Gneezy et al., 2011). Although this study does not directly examine long-term effects or the crowding-out effect in particular, the strong reliance on PIA suggests that it may be relevant to consider when evaluating individuals' engagement in environmental sustainability campaigns.

5.6 Advertising attitude and Brand attitude

The results demonstrate that advertising attitude is significantly associated with brand attitude in both models. This echoes prior literature, which consistently finds advertising attitude to be an important factor in shaping brand evaluations (Jublee et al., 2023; Lee et al., 2017; Wahid & Ahmed, 2011). This may be explained by value transfer processes and associative mechanisms between the brand and the advertisement message (Jublee et al., 2023; Wahid & Ahmed, 2011). In this context, positive perceptions of the advertisement, such as viewing McDonald's as environmentally responsible or customer-oriented through rewarding consumers, may transfer to the brand itself, leading to more favorable brand attitudes.

Moreover, advertising attitude did not exhibit the expected positive association with intention that most previous literature suggests (Ramadhani et al., 2020; Saadeghvaziri et al., 2013;

Wang & Sun, 2010; Wolin et al., 2002; Yoon & Kim, 2016). Instead, advertising attitude showed a significant negative association with behavioral intention and a non-significant negative association with behavioral expectation. The significant association could mean that individuals may hold negative attitudes toward the advertisement while still intending to engage with the campaign due to other motivating factors, such as attractive incentives, which is likely given the strong effect of PIA on intention. Another possible interpretation is that individuals may view the advertisement positively from an aesthetic perspective or appreciate that it encourages sustainable behaviors, but still lack the intention to engage with the campaign themselves. As discussed, this may be because the incentives were not perceived as attractive enough for them, or because they held negative attitudes toward the brand.

Further, brand attitude acts as a mediator between advertising attitude and intention. For behavioral intention, competitive mediation is indicated, since advertising attitude leads to higher intention because it improves how people feel about the brand, even though, on its own, it is negatively associated with intention. In contrast, behavioral expectation depends entirely on advertising attitude generating evaluations of the brand, which in turn explain intentions to engage in the campaign, indicating full mediation. With relatively limited prior literature on this topic, these findings extend existing research by showing that the mediating role of brand attitude is more complex than previously suggested. While prior studies mainly identify partial mediation with a positive direct effect (Panggati et al., 2023; Wahid & Ahmed, 2011), these results instead reveal both competitive mediation and full mediation across different intention measures.

Furthermore, the results demonstrate that brand attitude is positively associated with intention. This is consistent with previous literature, which identifies brand attitude as a key predictor of intention (Chin et al., 2019; Putri & Roostika, 2021; Zhao et al., 2024). The findings indicate that favorable brand evaluations increase individuals' likelihood of engaging in behaviors associated with that brand. This relationship may be explained by individuals' degree of trust and familiarity with the brand, suggesting that brand attitude may operate through several pathways leading to intention (Putri and Roostika, 2021).

Together, the findings suggest that intention is more closely associated with brand attitudes than with advertising attitudes, indicating that favorable brand attitudes may outweigh both

positive and negative reactions to individual campaign reactions. It also indicates that advertising attitude alone may not be enough to forecast consumer behavior, as implied by Balaskas et al. (2023). Moreover, the distinction between competitive mediation and full mediation further implies that the influence of advertising attitude on intention varies depending on how intention is conceptualized.

5.7 Behavioral intention versus Behavioral expectation

Both behavioral intention and behavioral expectation were used as dependent variables with the aim of uncovering whether Ajzen's (1991) TPB framework needs to be more explicit about which conceptualization of intention it is testing, as suggested by Warshaw & Davis (1985), or if it is enough to consider intention as one construct.

The discriminant validity indicates a high degree of overlap between the two constructs, suggesting that previous studies have not necessarily been incorrect when mixing items considered as both behavioral intention and behavioral expectation. Further, R^2 indicates that the variables in the model were slightly better at explaining behavioral intention than behavioral expectation, though the difference is small. Nonetheless, these findings are expected since behavioral expectations rely more on situational factors, making it more difficult to capture (Warshaw & Davis, 1985).

Moreover, even though the results indicate that the constructs are similar, the hypothesis testing indicates that there might be some differences. Specifically, differences are mainly found for the negative relationship between advertising attitude and intention, where behavioral intention showed a significant relationship, and behavioral expectation showed a non-significant one. A potential explanation is that behavioral expectation is more closely linked to perceived real-world behavior. Therefore, the relatively weak negative effect of advertising attitude may disappear when respondents assess what they believe they will actually do, instead of what they intend to do. Further, PIA, brand attitude, and subjective norms may outweigh direct reactions to the advertisement itself.

The findings suggest that behavioral intention and behavioral expectation are similar, but not interchangeable. The slightly lower explanatory power of the model for behavioral expectation, together with differences in specific relationships, suggests that additional

factors may be required to better explain behavioral expectation compared to behavioral intention.

6. Theoretical contributions

This study contributes to research on consumer behavior, advertising, and sustainability. First, the study identifies PIA as the key driver of intention in incentivized environmental sustainability campaigns. While previous literature has acknowledged the effectiveness of incentives, the present findings show that incentives may outweigh internal attitudinal drivers, such as attitudes toward the behavior or environmental concern. Its potential to outweigh even environmental concern is an especially strong contribution given that previous research most often identifies environmental concern as a strong predictor of intention in the sustainability context. However, this supports and extends theories related to external motivation and crowding-out effects, suggesting that in low-involvement contexts, intention may be driven more by incentives than by intrinsic considerations. Furthermore, through studying incentives by using perceived attractiveness, this study adds conceptual precision to a relatively underexplored area in the literature.

Second, the findings contribute to advertising research by clarifying the roles of advertising attitude and brand attitude in shaping intention. While advertising attitude has often been assumed to directly influence intention, the findings indicate that its effect is primarily indirect, operating through brand attitude. By demonstrating both competitive partial mediation and full mediation across different conceptualizations of intention, this study provides a more nuanced understanding of how attitudinal processes develop. In doing so, it highlights the importance of distinguishing between evaluative responses to advertisements and brand-related attitudes, positioning brand attitude as a more consistent determinant of intention.

Finally, the findings contribute to the discussion regarding behavioral intention and behavioral expectation. Although the two constructs exhibit substantial overlap, the findings indicate that they are not fully interchangeable, as differences emerge in specific relationships within the model and the models' explanatory power. This suggests that treating intention as a single construct may overlook important nuances, particularly in contexts where situational factors play a role. By comparing the two constructs, this study suggests a differentiation between the constructs may be justified.

7. Managerial implications

This research contributes to several implications for practitioners. The authors believe these implications especially apply to marketing practitioners working in Sweden or similar cultural contexts, or with low involvement products.

The most important contribution is that marketers should focus sustainability campaigns on incentives, rather than trying to appeal to individuals' internal drivers, such as attitudes or environmental sentiments. In this study, PIA was strongly associated with intentions, while environmental concern was not significantly associated with intentions to engage in the campaign. It is easy to believe that appealing to people's environmental concerns automatically makes them want to engage in environmental behavior. However, as emphasized in this study, engaging in an environmental sustainability campaign is not simply about performing a sustainable action. Individuals may still engage in the sustainable behavior, but not fully interact with the campaign, simply because the incentive is not attractive enough for them. This perceived incentive attractiveness indicates that it is not the cost of the incentive that matters, but how people value it. Therefore, marketers should apply incentives that appeal to their target audience rather than focusing on having the most costly incentive. This all indicates that if incentives are included, positioning the incentives as attractive to the target audience is more important than appealing to their environmental concern. However, importantly, for sustainability campaigns without incentives, the focus on environmental aspects may work better as it could be the external motivator that outweighs internal drivers such as environmental concern.

Moreover, advertisements should emphasize that important others expect or approve of the behavior, thereby resonating with subjective norms, which were found to be a significant predictor of intention. Further, a well-liked advertisement alone is not sufficient to drive strong engagement, as overall perceptions of the brand have a more consistent connection to intentions. This highlights that marketers need to focus on strengthening the brand, rather than only producing appealing advertisements, as brand attitudes are more consistently associated with intentions.

Finally, the study's contribution may extend particularly to fast food, retail and other low-involvement brands where consumers are likely to hold prior brand attitudes and

are easily affected by rewards. Thus, the findings are most relevant in marketing contexts in which established brands use campaigns to influence consumer intention.

8. Conclusion

This study aims to understand what drives individuals to engage in incentivized environmental sustainability campaigns and specifically answer the question “*To what extent can the Theory of Planned Behavior model, extended with contextual and marketing-related factors, explain individuals’ intentions to engage in incentivized environmental sustainability campaigns?*”. The research reveals that the study explains individuals’ intentions to engage in incentivized environmental sustainability campaigns to a large extent, as shown by the large R^2 . Nonetheless, not all factors were significantly positively associated with intention. PIA, subjective norms, and brand attitude proved to be the strongest drivers explaining intention in this context, with PIA far exceeding the effects of subjective norms and brand attitude. Additionally, to a certain extent, advertising attitude also has an association with intention, yet negatively and only significantly with behavioral intention. These findings suggest that engagement with real-world incentivized environmental sustainability campaigns is primarily driven by campaign design and extrinsic motivation, rather than by internal drivers.

Further, the study distinguished between behavioral intentions and behavioral expectations, as previous literature has indicated that these may be distinct constructs that researchers sometimes treat as one. This study indicates that there are minor differences between the types of intentions, but the results do not indicate that these are distinctly separate constructs.

8.1 Limitations

One limitation of this research is the focus on intentions rather than actual behavior, since individuals’ intentions do not always correspond to their actual behavior. However, by integrating behavioral expectation alongside behavioral intention, this limitation is partially addressed. Behavioral expectation is a closer predictor of behavior, accounting for situational constraints and external factors (Warshaw & Davis, 1985). Additionally, studying a campaign with proven real-world effects indicates that the measured intentions are less hypothetical and more reflective of real behavior, given that the campaign has already generated actual participation. Furthermore, intention is often considered the best predictor of behavior (Ajzen, 1991), while actual behavior is difficult to measure reliably, supporting the use of intention-based measures.

Furthermore, online surveys may suffer from self-selection, non-response and social desirability bias, particularly in sustainability contexts where environmentally responsible behavior is socially valued. However, the self-administered and anonymous survey format may reduce social desirability bias by limiting interviewer influence and allowing respondents to answer more freely. To further reduce bias and improve response quality, the survey was distributed through Norstat's consumer panel to obtain a broader and more demographically balanced sample. Additionally, as respondents could not receive clarification when completing the questionnaire, it was carefully designed using established scales and pre-tested through a pilot study to ensure clarity and ease of completion (Bell et al., 2022).

In connection to the survey, there is also a limitation regarding the measurement of PIA. Although the construct captures respondents' subjective evaluation of the campaign reward, one item refers to being "more likely to participate," which is semantically close to intention. This overlap may inflate the observed relationship between PIA and intention. However, in the Swedish questionnaire, the wording emphasized the perceived attractiveness and relevance of the reward rather than intention alone, making this less likely. Nonetheless, some semantic similarities between the constructs remain.

Further, the use of McDonald's as the focal brand has implications for interpreting the findings. Since brand attitude was a significant predictor of intention, responses may partly reflect respondents' pre-existing evaluations of McDonald's. Given that McDonald's is a highly familiar, low-involvement brand, incentives and brand perceptions may be especially important. The findings may therefore be most relevant for well-known consumer brands using reward-based sustainability campaigns.

Finally, a single real-world campaign enhances ecological validity but may limit the generalizability of the findings. The results are context-specific and influenced by the characteristics of the campaign, including its design, incentive structure and cultural setting. While this limitation is common in similar research, it should be considered when interpreting the findings.

8.2 Future research

While demonstrating valuable insights, this study opens up for further research. Given the finding that subjective norms are the only core TPB construct having a significant association with intention, more research is needed to understand the degree of context dependency in the framework. In particular, future research should examine what influences subjective norms, to better understand whether they are shaped by the brand, the incentive or the sustainable behavior.

Given the focus on the Swedish context, characterized by high environmental awareness, future research should critically examine whether the identified drivers of intention hold in other cultural and contextual settings, such as countries with low environmental awareness. This is needed to understand if the findings are generalizable or if the environmental awareness or another aspect of the culture affects the findings.

A central finding is that PIA may outweigh internal drivers such as attitudes and environmental concern. While this highlights the effectiveness of incentives, it also challenges established assumptions within sustainability and TPB research, where intrinsic motivations are typically considered central. Future research should therefore assess whether this pattern reflects a broader shift toward extrinsic motivation, or if it is specific to this context. In this regard, qualitative studies could provide deeper insights into the underlying decision-making processes and help explain why individuals prioritize incentives over intrinsic motivations. At the same time, the strong reliance on incentives raises questions about their long-term effectiveness. Future research should examine whether incentive-driven engagement can be sustained over time and whether it leads to crowding-out effects, further weakening intrinsic motivation. Furthermore, exploring alternative campaign design elements, such as gamification or social recognition, would further contribute to understanding whether engagement can be achieved without relying primarily on incentives.

Moreover, future research should further investigate how different combinations of advertising attitude and brand attitude jointly influence engagement, to better understand whether favorable responses to advertising can compensate for weaker brand perceptions, or vice versa. Future studies could also examine whether pre-existing brand attitudes moderate the relationship between advertising attitude and intention, rather than acting as a mediator

between advertising attitude and intention. This is particularly relevant, as the authors interpret that individuals liking an advertisement while still lacking intention to engage may be due to weak brand attitudes.

Finally, given the well-documented intention-behavior gap, future research should examine how and when intentions translate into actual behavior in sustainability campaign contexts. In particular, it would be valuable to investigate whether the identified drivers of intention also lead to behavior, thereby providing a more complete understanding of their practical implications.

9. References

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10. Appendices

Appendix 1: Campaign elements





[Link to the campaign video used](#)

Appendix 2: Cronbach's alpha for pilot study

All constructs except for PBC exhibited sufficient internal reliability. The outer loadings helped identify the one item in PBC that caused the problem. After removing this item, internal reliability consistency was reached for all constructs. The authors ensured that the removed item was not used in the final study.

	Cronbach's alpha
Advertising Attitude	0.944
Attitude	0.943
Behavioral Expectation	0.992
Behavioral Intention	0.982
Brand Attitude	0.766
Environmental Concern	0.773
Perceived Behavioral Control	0.643
Perceived Incentive Attractiveness	0.850
Subjective Norms	0.934

Cronbach's alpha for pilot study (PBC5 included)

	Cronbach's alpha
Advertising Attitude	0.944
Attitude	0.943
Behavioral Expectation	0.992
Behavioral Intention	0.982
Brand Attitude	0.766
Environmental Concern	0.773
Perceived Behavioral Control	0.746
Perceived Incentive Attractiveness	0.850
Subjective Norms	0.934

Cronbach's alpha for pilot study (PBC5 not included)

Appendix 3: Full questionnaire

Välkommen!

Tack för att du tar dig tid att delta i denna enkät. Studien genomförs som en del av en masteruppsats vid Handelshögskolan i Stockholm.

Ditt deltagande tar cirka **10 minuter**. **Alla svar är anonyma, lagras säkert och används endast för akademiska ändamål.** Du kan när som helst avbryta enkäten utan några konsekvenser.

Om du har några frågor, vänligen kontakta: Emilia Thorstensson (42791@student.hhs.se) eller Timmy Pelli (42816@student.hhs.se).

Jag har läst informationen ovan och **samtycker** till att delta i denna studie, samt intygar att jag är över 18 år och bosatt i Sverige.

☐ Ja

☐ Nej

Du kommer nu att få se en 45 sekunder lång video från McDonald's kampanj **"Deal with the Trash"**. Vänligen se **hela** videon innan du går vidare.

På nästa sida kommer du sedan att få se fyra bilder från samma kampanj.

Kampanjen bygger på ett initiativ där ett AI-verktyg, tränat för att känna igen snabbmatsförpackningar och papperskorgar, gjorde det möjligt för människor att få belöningar (deals) i McDonald's app när man slänger takeaway-skräp på rätt ställe, även om det inte kommer från McDonald's. Deals innebär att du kan få varor från McDonald's till ett rabatterat pris och kommer i denna enkät benämnas som "belöning".

Campaign video shown

På denna sida ser du fyra bilder från samma McDonald's kampanj **"Deal with the Trash"**.

Ta din tid att se över samtliga bilder. I nästa del av enkäten kommer du att få svara på frågor om McDonald's, kampanjen **"Deal with the Trash"** som du nyss såg, dina känslor kring kampanjen samt det beteende som kampanjen uppmanar till. Föreställ dig att kampanjen är aktiv just nu.

Campaign images shown

Vilken belöning får kunder som skannar sitt takeaway-skräp med McDonald's app?

☐ En deal

☐ En donation till en miljöorganisation

☐ Inget av dessa

☐ Jag kommer inte ihåg

Att inom en snar framtid slänga takeaway-skräp i en papperskorg och skanna det med McDonald's app för att få en belöning är för mig...

1: Inte önskvärt - 7: Önskvärt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Att inom en snar framtid slänga takeaway-skräp i en papperskorg och skanna det med McDonald's app för att få en belöning är för mig...

1: Negativt - 7: Positivt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Att inom en snar en framtid slänga takeaway-skräp i en papperskorg och skanna det med McDonald's app för att få en belöning är för mig...

1: En dålig idé - 7: En bra idé

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Att inom en snar framtid slänga takeaway-skräp i en papperskorg och skanna det med McDonald's app för att få en belöning är för mig...

1: Inte fördelaktigt - 7: Fördelaktigt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

Personer som är viktiga för mig skulle **stödja mitt beslut** att inom en snar framtid slänga takeaway-skräp i en papperskorg och skanna det med McDonald's app för att få en belöning.

1: Stämmer inte alls – 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

Personer som är viktiga för mig skulle tycka att det är en **bra idé** att jag inom en snar framtid slänger takeaway-skräp i en papperskorg och skannar det med McDonald's app för att få en belöning.

1: Stämmer inte alls – 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

Personer som är viktiga för mig skulle tycka att det var **önskvärt** att jag inom en snar framtid slänger takeaway-skräp i en papperskorg och skannar det med McDonald's app för att få en belöning.

1: Stämmer inte alls – 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

Personer som är viktiga för mig **tycker att jag inom en snar framtid bör** slänga takeaway-skräp i en papperskorg och skanna det med McDonald's app för att få en belöning.

1: Stämmer inte alls – 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

Att inom en snar framtid slänga takeaway-skräp i en papperskorg och skanna det med McDonald's app för att få en belöning skulle vara enkelt för mig.

1: Stämmer inte alls – 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

Jag har den tid och de resurser som krävs för att inom en snar framtid slänga takeaway-skräp i en papperskorg och skanna det med McDonald's appen för att få en belöning.

1: Stämmer inte alls – 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

Jag anser att jag har förmågan att inom en snar framtid slänga takeaway-skräp i en papperskorg och skanna det med McDonald's app för att få en belöning.

1: Stämmer inte alls - 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

Om jag inom en snar framtid slänger takeaway-skräp i en papperskorg och skannar det med McDonald's app för att få en belöning är helt upp till mig.

1: Stämmer inte alls - 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Påminnelse: När du slänger ditt takeaway-skräp i en papperskorg och skannar det i appen kan du få belöningar (deals) från McDonald's. Dessa deals innebär att du kan få varor från McDonald's till ett rabatterat pris.

Hur väl stämmer följande påstående in på dig?

Att bli erbjuden en belöning i McDonald's app gör mig mer benägen att delta i denna kampanj.

1: Stämmer inte alls - 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

Jag har inget emot att skanna takeaway-skräp för att få en belöning i McDonald's app.

1: Stämmer inte alls - 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

De belöningar jag kan få genom den här kampanjen är väldigt attraktiva för mig.

1: Stämmer inte alls - 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Indikera din intention att inom en snar framtid slänga takeaway-skräp i en papperskorg och skanna det med McDonald's app för att få en belöning.

1: Det är absolut inte min intention – 7: Det är absolut min intention

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

Jag har en stark intention att inom en snar framtid slänga takeaway-skräp i en papperskorg och skanna det med McDonald's app för att få en belöning.

1: Stämmer inte alls – 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

Jag har för avsikt att inom en snar framtid slänga takeaway-skräp i en papperskorg och skanna det med McDonald's app för att få en belöning.

1: Stämmer inte alls – 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur sannolikt är det att du inom en snar framtid faktiskt kommer att slänga takeaway-skräp i en papperskorg och skanna det med McDonald's app för att få en belöning

1: Väldigt osannolikt – 7: Väldigt sannolikt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

Inom en snar framtid kommer jag att slänga takeaway-skräp i en papperskorg och skanna det med McDonald's app för att få en belöning.

1: Stämmer inte alls – 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

Jag förväntar mig att jag inom en snar framtid kommer slänga takeaway-skräp i en papperskorg och skanna det med McDonald's app för att få en belöning.

1: Stämmer inte alls – 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Gillar du den här kampanjen?

1: Jag gillar den inte alls – 7: Jag gillar den mycket

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Tycker du den här kampanjen är intressant?

1: Inte alls intressant – 7: Mycket intressant

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

Jag är positivt inställd till kampanjen.

1: Stämmer inte alls – 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Vad tycker du om McDonald's som varumärke?

1: Jag tycker väldigt dåligt om McDonald's – 7: Jag tycker väldigt bra om McDonald's

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Vad tycker du om McDonald's jämfört med likvärdiga konkurrenter?

1: McDonald's är inte lika bra som konkurrerande varumärken – 4:

McDonald's är lika bra som konkurrerande varumärken – 7:

McDonald's är bättre än konkurrerande varumärken

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

McDonald's har produkter som jag vill testa.

1: Stämmer inte alls – 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Nu kommer en avslutande sektion som handlar om frågor som ej är kopplade till McDonald's eller kampanjen. Du kommer att få svara på frågor om din miljöoro samt frågor om din bakgrund.

Hur väl stämmer följande påstående in på dig?

Jag är mycket oroad över miljön.

1: Stämmer inte alls - 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl stämmer följande påstående in på dig?

Jag är villig att minska min konsumtion för att bidra till att skydda miljön.

1: Stämmer inte alls - 7: Stämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl håller du med om följande påstående?

Strängare miljöregleringar är nödvändiga för att skydda naturen.

1: Håller inte alls med - 7: Håller med helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur väl håller du med om följande påstående?

Jag är inte alls oroad över miljön.

1: Håller helt med - 7: Håller inte alls med

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur gammal är du? (Skriv en siffra)

Vilket kön identifierar du dig som?

☐ Man
☐ Kvinna
☐ Icke-binär
☐ Annat / Vill inte säga

Vad är din huvudsakliga sysselsättning?

☐ Student (Gymnasiet eller likvärdigt)
☐ Student (Högskola eller likvärdigt)
☐ Yrkesarbete
☐ Arbetslös
☐ Pensionär
☐ Annat (vänligen specificera)

Vilken är din bostadsort?

- ☐ Stockholm
- ☐ Göteborg
- ☐ Stad med mer än 100 000 invånare
- ☐ Stad med mer än 50 000 invånare
- ☐ Stad med mer än 10 000 invånare
- ☐ Ort eller liknande med mindre än 10 000 invånare

Vad är din högsta nivå av avslutade studier?

- ☐ Förgymnasial utbildning eller lägre
- ☐ Gymnasial utbildning
- ☐ Eftergymnasial utbildning (max 2 år, yrkeshögskola eller likvärdigt)
- ☐ Universitet/Högskola Kandidatexamen
- ☐ Universitet/Högskola Magister/Masterexamen
- ☐ Doktorsexamen eller likvärdigt

Vad är din månatliga bruttointkomst (före skatt)?

- ☐ Mindre än 14 000
- ☐ 14 000 – 20 000 SEK
- ☐ 20 001 – 30 000 SEK
- ☐ 30 001 – 40 000 SEK
- ☐ 41 000 – 50 000 SEK
- ☐ 50 001 – 60 000 SEK
- ☐ 60 0001 eller mer
- ☐ Vill ej svara

Tack för att du har tagit dig tiden att svara på denna enkät!

Vänta medan du omdirigeras.

[Klicka här om du inte omdirigeras automatiskt.](#)

Appendix 4: Demographic profile of final data sample

Demographic variables	Category	Frequency	Percentage
Gender	Male	192	45%
	Female	232	54%
	Non-binary	1	0,2%
	Don't want to say	2	0,5%
Age group	18-24	29	7%
	25-30	53	12%
	31-40	73	17%
	41-50	80	19%
	51-60	67	16%
	61-70	63	15%
	71-80	37	9%
	81-86	14	3%
	Did not specify	11	3%
Education	Pre-secondary education or lower	10	2%
	Upper secondary education (high school)	144	34%
	Post-secondary education (max 2 years, vocational college or equivalent)	74	17%
	University/College Bachelor's degree	117	27%
	University/College Master's degree	74	17%
	Doctoral degree (PhD) or equivalent	7	2%
	Did not specify	1	0%
Income	Less than 14,000 SEK	34	8%
	14,000 – 20,000 SEK	36	8%
	20,001 – 30,000 SEK	63	15%
	30,001 – 40,000 SEK	80	19%
	40,001 – 50,000 SEK	90	21%
	50,001 – 60,000 SEK	42	10%
	60,001 or more	28	7%
	Prefer not to say	54	13%
Where do you live?	Stockholm	108	25%
	Gothenburg	30	7%
	City with more than 100,000 inhabitants	90	21%
	City with more than 50,000 inhabitants	43	10%
	City with more than 10,000 inhabitants	63	15%
	Town or similar with fewer than 10,000 inhabitants	93	22%
What is your main occupation?	Student (upper secondary school or equivalent)	9	2%
	Student (university/college or equivalent)	27	6%
	Employed	253	59%
	Unemployed	12	3%
	Retired	103	24%
	Other (please specify)	23	5%

Appendix 5: Internal reliability (Behavioral intention as dependent variable)

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
ADVERTISING ATTITUDE	0.940	0.942	0.961
ATTITUDE	0.908	0.918	0.935
BEHAVIORAL INTENTION	0.984	0.984	0.989
BRAND ATTITUDE	0.881	0.906	0.926
ENVIRONMENTAL CONCERN	0.875	0.900	0.922
PERCEIVED BEHAVIORAL CONTROL	0.898	0.914	0.936
PERCEIVED INCENTIVE ATTRACTIVENESS	0.865	0.872	0.918
SUBJECTIVE NORMS	0.938	0.943	0.956

Appendix 6: Internal reliability (Behavioral expectation as dependent variable)

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
ADVERTISING ATTITUDE	0.939	0.941	0.961
ATTITUDE	0.908	0.921	0.935
BEHAVIORAL EXPECTATION	0.989	0.989	0.993
BRAND ATTITUDE	0.881	0.905	0.926
ENVIRONMENTAL CONCERN	0.873	0.896	0.921
PERCEIVED BEHAVIORAL CONTROL	0.899	0.925	0.936
PERCEIVED INCENTIVE ATTRACTIVENESS	0.866	0.877	0.918
SUBJECTIVE NORMS	0.938	0.944	0.955

Appendix 7: Average Variance Extracted (Behavioral intention as dependent variable)

	Average variance extracted (AVE)
ADVERTISING ATTITUDE	0.893
ATTITUDE	0.782
BEHAVIORAL INTENTION	0.968
BRAND ATTITUDE	0.807
ENVIRONMENTAL CONCERN	0.798
PERCEIVED BEHAVIORAL CONTROL	0.829
PERCEIVED INCENTIVE ATTRACTIVENESS	0.789
SUBJECTIVE NORMS	0.844

Appendix 8: Average Variance Extracted (Behavioral expectation as dependent variable)

	Average variance extracted (AVE)
ADVERTISING ATTITUDE	0.891
ATTITUDE	0.782
BEHAVIORAL EXPECTATION	0.979
BRAND ATTITUDE	0.807
ENVIRONMENTAL CONCERN	0.797
PERCEIVED BEHAVIORAL CONTROL	0.830
PERCEIVED INCENTIVE ATTRACTIVENESS	0.789
SUBJECTIVE NORMS	0.843

Appendix 9: Fornell-Larcker (Behavioral intention as dependent variable)

	ADVERTISING ATTITUDE	ATTITUDE	BEHAVIORAL INTENTION	BRAND ATTITUDE	ENVIRONMENTAL CONCERN	PERCEIVED BEHAVIORAL CONTROL	PERCEIVED INCENTIVE ATTRACTIVENESS	SUBJECTIVE NORMS
ADVERTISING ATTITUDE	0.945							
ATTITUDE	0.769	0.885						
BEHAVIORAL INTENTION	0.636	0.752	0.984					
BRAND ATTITUDE	0.465	0.485	0.551	0.898				
ENVIRONMENTAL CONCERN	0.335	0.268	0.220	0.040	0.894			
PERCEIVED BEHAVIORAL CONTROL	0.630	0.668	0.621	0.331	0.251	0.911		
PERCEIVED INCENTIVE ATTRACTIVENESS	0.717	0.806	0.858	0.556	0.254	0.683	0.888	
SUBJECTIVE NORMS	0.713	0.807	0.717	0.405	0.281	0.669	0.734	0.919

Appendix 10: Fornell-Larcker (Behavioral expectation as dependent variable)

	ADVERTISING ATTITUDE	ATTITUDE	BEHAVIORAL EXPECTATION	BRAND ATTITUDE	ENVIRONMENTAL CONCERN	PERCEIVED BEHAVIORAL CONTROL	PERCEIVED INCENTIVE ATTRACTIVENESS	SUBJECTIVE NORMS
ADVERTISING ATTITUDE	0.944							
ATTITUDE	0.765	0.884						
BEHAVIORAL EXPECTATION	0.619	0.719	0.989					
BRAND ATTITUDE	0.464	0.483	0.575	0.898				
ENVIRONMENTAL CONCERN	0.338	0.265	0.220	0.041	0.892			
PERCEIVED BEHAVIORAL CONTROL	0.634	0.670	0.594	0.331	0.255	0.911		
PERCEIVED INCENTIVE ATTRACTIVENESS	0.717	0.805	0.830	0.555	0.255	0.684	0.888	
SUBJECTIVE NORMS	0.713	0.804	0.683	0.404	0.284	0.673	0.733	0.918

Appendix 11: Outer Loadings without EC4 and PBC4

	Outer loadings
ADA1 <- ADVERTISING ATTITUDE	0.958***
ADA2 <- ADVERTISING ATTITUDE	0.942***
ADA3 <- ADVERTISING ATTITUDE	0.934***
ATT1 <- ATTITUDE	0.876***
ATT2 <- ATTITUDE	0.881***
ATT3 <- ATTITUDE	0.883***
ATT4 <- ATTITUDE	0.897***
BA1 <- BRAND ATTITUDE	0.928***
BA2 <- BRAND ATTITUDE	0.848***
BA3 <- BRAND ATTITUDE	0.916***
BE1 <- BEHAVIORAL EXPECTATION	0.989***
BE2 <- BEHAVIORAL EXPECTATION	0.992***
BE3 <- BEHAVIORAL EXPECTATION	0.987***
BI1 <- BEHAVIORAL INTENTION	0.984***
BI2 <- BEHAVIORAL INTENTION	0.987***
BI3 <- BEHAVIORAL INTENTION	0.982***
EC1 <- ENVIRONMENTAL CONCERN	0.872***
EC2 <- ENVIRONMENTAL CONCERN	0.928***
EC3 <- ENVIRONMENTAL CONCERN	0.880***
PBC1 <- PERCEIVED BEHAVIORAL CONTROL	0.908***
PBC2 <- PERCEIVED BEHAVIORAL CONTROL	0.914***
PBC3 <- PERCEIVED BEHAVIORAL CONTROL	0.909***
PIA1 <- PERCEIVED INCENTIVE ATTRACTIVENESS	0.914***
PIA2 <- PERCEIVED INCENTIVE ATTRACTIVENESS	0.829***
PIA3 <- PERCEIVED INCENTIVE ATTRACTIVENESS	0.919***
SN1 <- SUBJECTIVE NORMS	0.862***
SN2 <- SUBJECTIVE NORMS	0.942***
SN3 <- SUBJECTIVE NORMS	0.949***
SN4 <- SUBJECTIVE NORMS	0.919***

Appendix 12: AI disclosure

In this thesis, artificial intelligence (AI) was used in a limited, transparent and carefully supervised way. Specifically, ChatGPT-5.5, SciSpace and Grammarly were used. The use was restricted to enhancing the academic language, clarity, and general readability of the written

text, as well as streamlining the process of identifying potentially viable literature, helping ensure interpretations of data were correct, and summarizing articles to gain a quick understanding of the content. Throughout the process, all AI-generated suggestions were critically evaluated, carefully reviewed and ensured to meet research quality and academic integrity standards. Additionally, AI was never used to generate original content or arguments, and was never used as a source of information. Further, the authors acknowledged that generative AI tools can hallucinate information. This was taken into consideration, and therefore every AI output or suggestion was always carefully checked and reviewed. The AI usage helped increase the quality of the written work, but it also underscored the need for human judgement, as shown by occasionally hallucinated results, missed nuances in written text and need for reliable human analytical reasoning. While being great at formulating sentences that are grammatically correct, AI can not replace the underlying meanings and contextualisations that humans create.

ChatGPT-5.5 was used to identify grammatical errors and improve clarity of the text by suggesting rephrasing of the wording to meet academic standards, shortening long phrases, or suggesting alternative word choices. It was also used as a tool to ensure the authors interpreted data correctly. ChatGPT also helped summarizing articles simply to understand if they were relevant for the study. Afterwards, the authors read the actual articles if the summary were deemed relevant, to guarantee actual relevance.

Examples of prompts used included:

- “Help me rewrite this sentence to ensure it uses academic wording while keeping all the information stated. Don’t add any new information.”
- “Improve the following paragraph to make it flow and shorten where possible, while keeping all the stated text”
- “Is the following data interpreted correctly?”
- “Please summarize the following articles. Focus on the results section.”
- “Please provide a synonym to [word], to be used in the following sentence”

SciSpace was used early in the process to identify and find potential literature to use in the study. It was used sparingly to generate extensive lists of articles where the authors could themselves identify which of these were potentially applicable for the study.

Examples of prompts used included:

- “Give me peer-reviewed articles on the topic of attitudes towards ads, advertisements, campaigns, in connection with behavior and behavioral intentions.”
- “I want peer-reviewed papers on incentives and how it affects consumer behavior in relation to advertisements.”
- “Find articles on incentivizing sustainability behavior. Include only papers that are peer-reviewed.”

After identifying the literature, the authors searched for these in the databases mentioned in the study, thereby discontinuing the use of AI involved in this specific process. This was done

to make sure that the articles given by SciSpace were actually peer-reviewed and of good quality.

Grammarly was used towards the end of the process solely for fixing grammar, punctuation, and spelling. It strictly helped with correcting mechanical errors and did not contribute to the content, structure, or analysis of the study. Typical Grammarly interactions were based on the software scanning written text and giving suggestions on improvements. From there, the authors themselves evaluated whether this was applicable and deemed appropriate, taking into mind conceptual meanings and nuances.