The Impact of Hope and Fear Appeals in Video Content on Promoting Sustainable Tourism Behaviour

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Master's Thesis – Communication Science

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Abstract

The tourism industry remains a key driver of economic growth, while also posing persistent challenges to environmental sustainability. Tourists often engage in less sustainable behavior during vacations than in their daily lives. This study examines how emotional framing in short video content on social media influences tourists' pro-environmental intentions. Drawing on the Extended Parallel Process Model, it analyzes the effects of fear and hope appeals, with self-efficacy as a moderator and sustainable behavior at home as a control variable.

A quantitative experiment was conducted with 237 tourists in Valencia, Spain. Participants were randomly assigned to one of eight conditions in a 2 × 2 × 2 between-subjects design. The experimental videos varied in emotional framing and the inclusion of efficacy cues, followed by a survey measuring behavioral intentions. The results showed that neither fear nor hope appeals significantly increased pro-environmental intentions. Self-efficacy did not significantly moderate these effects. However, prior sustainable behavior at home was a strong predictor of intentions to behave sustainably while traveling.

These findings suggest that emotional video messaging alone may have limited impact in tourism contexts, where psychological distancing and leisure-oriented goals may weaken message effectiveness. The study contributes to sustainability communication research by highlighting the contextual limitations of emotional appeals and underscoring the importance of habitual behavior and perceived behavioral relevance.

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Keywords: sustainability, tourism, emotional framing, video content, social media, hope, fear, pro-environmental intentions.

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1. Introduction

The rapid growth of tourism serves as a crucial economic driver, offering substantial benefits and generating numerous employment opportunities for citizens (Manzoor et al., 2019). However, this growth also presents urgent sustainability challenges, particularly in relation to environmental impacts (Hernández et al., 2019). In Spain, the country's coastlines are under increasing pressure from tourism, which contributes to elevated levels of waste and pollution (Barea Luchena & Chinchetru, 2023). The widespread presence of plastic pollution, with less than 30 percent of plastic being recycled, results in growing contamination of waterways, beaches, seas, and oceans (Barea Luchena & Chinchetru, 2023). Therefore, adopting sustainable tourism practices is essential to address these challenges and support the transition toward a more environmentally responsible tourism model (Molina-Gil et al., 2023). Given this context, the present research was conducted on-site in Valencia, Spain, which is a major coastal tourism destination exemplifying the environmental pressures facing Mediterranean regions.

One key factor in promoting sustainable tourism behavior is how environmental messages are framed emotionally. Emotional framing shapes how audiences interpret environmental issues and whether they engage in pro-environmental behavior (Park et al., 2022). Among the most frequently studied emotional appeals are hope and fear. Hope is associated with individuals' belief in their capacity to reach goals and identify strategies to achieve them (Snyder, 2002; Schornick et al., 2023). Hope-based messages often emphasize progress and success, fostering optimism and inspiring action (Rahmani et al., 2018). In contrast, fear appeals emphasize the consequences of inaction, such as climate change or ecosystem degradation (Witte & Allen, 2000; Wang et al., 2019). While fear can generate urgency, it may also lead to disengagement if the emotional intensity becomes overwhelming (Tannenbaum et al., 2015; Sun et al., 2022). Some evidence suggests that a combination of

hope and fear may be more effective than using either emotion alone. This pairing can balance urgency with a sense of achievable solutions, promoting both immediate and sustained pro-environmental behavior (Tao et al., 2023; Nabi & Myrick, 2018; Marciano et al., 2020; Myers et al., 2023).

In addition to emotional framing, self-efficacy plays a central role in shaping individuals' responses to sustainability messages and is examined in this study as a dependent variable. Self-efficacy refers to one's belief in their capacity to take actions that lead to desired outcomes (Bandura, 1977). Research shows that individuals who feel confident in their ability to make a difference are more likely to respond positively to environmental appeals (Nabi et al., 2018). When emotional messaging is paired with strong self-efficacy cues, audiences are more likely to feel empowered to act (Witte, 1992). This is particularly relevant in tourism contexts, where individuals' behavior often diverges from their everyday norms (Poortinga & Whitaker, 2018).

The role of emotional messaging is especially prominent in the digital sphere. In today's media landscape, social platforms such as Instagram and TikTok play a central role in shaping sustainable behavior through emotionally engaging short-form video content (Chen et al., 2011; Brehmer et al., 2020). These platforms use visual storytelling and interactive features to increase audience engagement. Prior research has shown that the framing of messages on these platforms significantly affects how users perceive environmental issues and act upon them (DiRusso & Myrick, 2021). Moreover, social media content has been linked to heightened awareness and increased engagement in eco-friendly practices, including conservation and waste reduction (Huerta-Álvarez et al., 2020; Hysa et al., 2022). Despite these developments, scholarly research on how social media promotes sustainable tourism, particularly through emotional video messaging, remains limited (Bilynets & Cvelbar, 2022).

Another factor relevant to this study, included as a control variable, is behavioral consistency across contexts. Understanding the relationship between sustainable actions at home and those practiced while on vacation is critical. Although many individuals adopt sustainable practices in their everyday lives, these habits often weaken in leisure settings due to shifting priorities such as comfort and relaxation (Juvan & Dolničar, 2014; Thøgersen, 2004). Including this variable allows for the examination of how everyday behaviors may inform or influence tourist behavior in unfamiliar environments.

Bringing these elements together, this study bridges theoretical and practical perspectives by investigating how digital emotional messaging, shaped by individual self-efficacy and prior sustainable habits, influences tourists' pro-environmental intentions. By analyzing the effects of hope and fear appeals, both individually and in combination, it offers insights into effective sustainability communication strategies within the tourism sector. Furthermore, the study examines how self-efficacy moderates these emotional effects, contributing to a more nuanced understanding of behavior change across different situational contexts.

The research question is as follows: What is the effect of emotional framing (hope and fear) in video content on tourists' pro-environmental intentions, and how does this effect differ depending on tourists' level of self-efficacy?

2. Theoretical framework

This chapter outlines the theoretical basis for examining how emotional appeals and self-efficacy influence tourists' pro-environmental intentions through short video content on social media. Section 2.1 introduces the sustainability challenges in tourism and highlights the role of emotional framing in video content as a strategy to influence tourist behavior. Sections 2.2 and 2.3 explore the effects of fear and hope appeals, respectively. Section 2.4 discusses the potential impact of combining these emotions. Sections 2.5 and 2.6 examine how self-efficacy strengthens these appeals, both individually and in combination. Finally, Section 2.7 considers how everyday sustainable behavior may carry over into vacation contexts. Together, these sections form the conceptual foundation for the study's hypotheses.

2.1. Sustainable Tourism and the Role of Emotionally Framed Video Content

The tourism sector, defined as the movement of individuals beyond their usual environment, has become a major driver of global economic growth (Jafari, 2002). However, this growth has brought substantial sustainability challenges, primarily due to tourism's considerable environmental footprint (Hernández et al., 2019). Addressing these challenges requires a behavioral shift among tourists toward more sustainable practices. Pro-environmental behavior (PEB), defined as actions that aim to minimize individual environmental impact, has therefore become central to sustainable tourism strategies (Kollmuss & Agyeman, 2002).

In this context, emotional framing has emerged as a promising communication strategy. It refers to the deliberate use of emotion to shape perceptions and motivate behavioral responses and has been shown to enhance the persuasiveness of environmental messages (Nabi et al., 2018). Although emotional framing has gained recognition, most research has focused on broad messaging rather than platform-specific formats. In particular,

how targeted emotional appeals such as fear and hope function within short-form video content in tourism remains underexplored (Bilynets & Cvelbar, 2022).

This approach is particularly relevant in digital communication, where social media plays a central role in shaping tourists' sustainable attitudes and intentions (DiRusso & Myrick, 2021). Platforms such as Instagram offer both reach and interactivity, enabling the widespread dissemination of emotionally framed content that engages users on a personal level (Huerta-Álvarez et al., 2020). Among the various formats used, short video content has proven especially effective due to its ability to combine visual, auditory, and narrative elements. This multimedia synergy elicits stronger emotional reactions than static images, fostering empathy, urgency, and deeper cognitive engagement with sustainability issues (Brader, 2005; Liu et al., 2024; Wang & Yue, 2022; Myers et al., 2023). Emotionally charged videos amplify resonance and enhance the persuasiveness of sustainability messaging, ultimately increasing the intention to act pro-environmentally (DiRusso & Myrick, 2021; Grappi et al., 2024; Nabi et al., 2018).

In summary, short videos on social media offer an effective medium for promoting sustainable tourism practices. Their emotionally engaging and interactive nature makes them especially well suited to influencing individual tourist behavior. However, further research is needed to explore how specific emotional appeals, particularly hope and fear, can be strategically integrated into video-based sustainability messaging.

2.2. The Power of Fear Appeals in Pro-Environmental Messaging

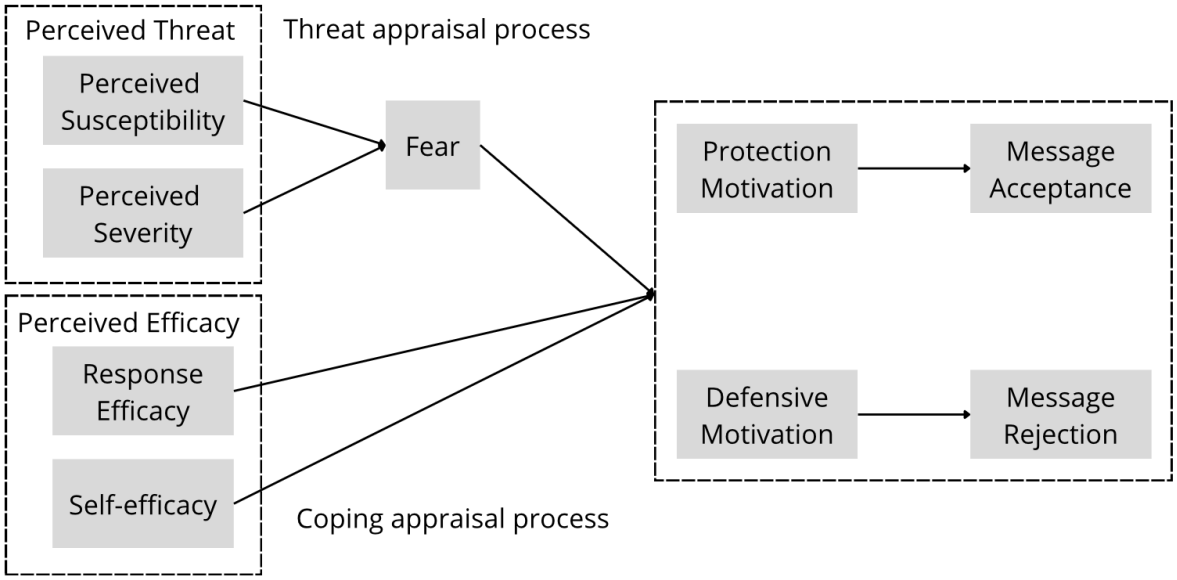
Fear appeals leverage the fundamental emotion of fear, which is a shared experience among humans and many animals (Ekman, 1992). These appeals involve strategically crafted messages that highlight potential harm and danger, thereby creating a sense of urgency and motivating change (Maddux & Rogers, 1983). In media contexts, a fear appeal is a persuasive

photo, video, or textual message that elicits fear by presenting a significant threat, which encourages the audience to change behavior in line with a recommended action (Ruiter et al., 2014). Research suggests that negatively framed environmental messages may be more persuasive than positively framed ones because they elicit stronger emotional responses (Amatulli et al., 2017). This effect is explained by cognitive appraisal theory, which posits that individuals experience shame when perceiving a threat to their moral self-image, such as contributing to environmental harm. Negative emotional framing can therefore strengthen pro-environmental motivation by prompting individuals to reflect on their environmental impact (Amatulli et al., 2017).

The Extended Parallel Process Model (EPPM) (see Figure 1; Witte, 2001) offers a relevant framework for understanding how individuals process fear-based messages in sustainability communication. According to the model, individuals engage in two simultaneous cognitive processes: threat appraisal and coping appraisal (Tannenbaum et al., 2015). Threat appraisal involves assessing the severity and personal susceptibility to a threat, while coping appraisal involves evaluating one's ability to perform the recommended behavior (self-efficacy) and its effectiveness (response efficacy). When both perceived threat and efficacy are high, individuals are likely to enter a danger control process, leading to constructive behavioral responses. However, if perceived threat is high but efficacy is low, individuals are more likely to engage in a fear control process, characterized by defensive or avoidant reactions. Research across domains supports the EPPM, including in environmental messaging. In this study, the EPPM provides the theoretical foundation for using fear-based video content to promote sustainable tourism behavior.

Figure 1

Extended Parallel Process Model



Adapted from Witte, 2001.

In environmental advocacy, fear appeals have shown effectiveness in highlighting the consequences of inaction. For example, the tobacco industry uses graphic imagery on packaging to discourage smoking by emphasizing health risks (Glock et al., 2012). Similarly, in tourism contexts, fear appeals distributed via social media have been found to influence behavioral intentions. Wang et al. (2019) applied Protection Motivation Theory to explore how travelers assess health threats and coping strategies. Their results showed that both types of appraisals significantly enhanced protection motivation, which in turn predicted behavioral outcomes.

Fear-based messaging can therefore influence tourists' perceptions and intentions toward sustainability. When such messages clearly convey the consequences of environmental neglect, they tend to evoke stronger emotional reactions than emotionally neutral content (Kim, 2006).

H1: Fear appeals in environmental video messaging on social media will increase pro-environmental intentions among tourists more than messages that contain no emotional appeals.

2.3. The Impact of Hope in Pro-Environmental Messaging

Hope is a forward-looking emotion centered on the belief in achieving desirable future outcomes and serves as a powerful motivator for shaping behavior (Chadwick, 2014). In environmental messaging, hope has been recognized as an effective emotional appeal, especially when individuals are encouraged to visualize positive and attainable outcomes instead of focusing solely on the negative consequences of inaction (Nabi & Myrick, 2018). This emotion fosters optimism and a sense of personal agency, both of which can motivate individuals to adopt sustainable behaviors. In tourism contexts, positive emotional experiences such as hope have been shown to significantly increase environmental awareness and behavioral intentions (Rahmani et al., 2018). These findings suggest that hope-based messaging can strengthen pro-environmental motivations by promoting constructive engagement and reducing feelings of helplessness, ultimately encouraging more sustainable tourist behavior.

Snyder's Hope Theory (2002) defines hope as a motivational state rooted in the belief that individuals can set and achieve meaningful goals. The theory identifies two key components: agency, or the determination to pursue goals, and pathways, the perceived ability to find and follow routes to reach those goals. This dual-process model presents hope as a dynamic force that not only sustains motivation but also supports problem-solving when individuals face challenges. This motivational quality is essential for helping people maintain a positive outlook and sense of control, particularly in the face of obstacles (D'Souza et al., 2020). For example, hope-based appeals in public health campaigns have been effective in

improving health behaviors, underscoring hope's potential to inspire meaningful action (Nabi & Myrick, 2019).

Hope also contributes to resilience on both individual and collective levels. Hopeful thinking improves life satisfaction and the capacity to overcome setbacks, highlighting its importance for long-term engagement with goals (Schornick et al., 2023). In the context of sustainability communication, this resilience is valuable, as individuals often face conflicting information or perceived barriers to adopting sustainable practices. Hope-based messaging can help tourists persevere in pro-environmental behaviors even when confronted with ambiguity or setbacks. This effectiveness is supported by research on social media, where hope appeals have been shown to enhance perceptions of corporate social responsibility and increase pro-sustainable behaviors (Kapoor et al., 2021).

High levels of hope are associated with greater motivation and perseverance, especially in challenging contexts such as sustainability (Tunner et al., 1989). By fostering resilience and a proactive mindset, hope reinforces individuals' determination to engage in pro-environmental behaviors, even when facing contradictions or difficulties. Moreover, hope-based appeals can enhance self-confidence, which is closely tied to the adoption of new, positive behaviors (Tao et al., 2023).

Therefore, hope-based messaging plays a critical role in shaping responses to environmental issues by cultivating an optimistic and action-oriented perspective, which is essential for sustained engagement with pro-environmental practices. This may be particularly effective in tourism contexts, where individuals are often motivated by personal enrichment, relaxation, and meaningful experiences. When aligned with these motivations, hope appeals can increase tourists' openness to sustainability messaging and strengthen their intentions to behave responsibly (Rahmani et al., 2018; Kapoor et al., 2021). By emphasizing

positive outcomes and clear goals, hope is expected to generate stronger pro-environmental intentions than fear-based messaging.

H2: Hope appeals in environmental video messaging on social media will increase pro-environmental intentions among tourists more than fear appeals.

2.4. Combining Hope and Fear in Pro-Environmental Messaging

Combining fear, which emphasizes the immediacy of environmental threats, with hope, which reinforces attainable goals, may create a stronger and more enduring impact on pro-environmental intentions (Myers et al., 2023). This approach leverages the distinct strengths of each emotion: fear highlights the risks of environmental inaction, while hope cultivates a vision of a sustainable future that individuals feel empowered to help achieve (Nabi et al., 2018). Whereas fear communicates urgency, hope fosters optimism and motivates individuals to pursue achievable, positive outcomes.

Research indicates that fear alone can elevate anxiety and potentially lead to defensive reactions or disengagement, particularly when individuals feel overwhelmed or powerless (Sun et al., 2022). Introducing hope alongside fear can mitigate these negative effects by fostering a sense of agency and direction, transforming emotional distress into proactive environmental behavior (Tao et al., 2023). This emotional combination offers a balanced strategy that may more effectively promote sustainable action.

Hope fosters resilience and supports long-term engagement with sustainable practices (Marciano et al., 2020), while fear enhances awareness of urgent environmental threats by making the consequences of inaction more salient (Witte, 2001). When combined, these emotions address both immediate concerns and future aspirations, offering a robust foundation for persuasive environmental messaging. This aligns with the concept

of emotional flow, in which messages transition from fear to hope (Nabi et al., 2018). Beginning with fear captures attention and conveys urgency; following with hope offers solutions and restores a sense of control, thereby increasing the likelihood of behavioral engagement.

This emotional balance not only emphasizes the urgency of environmental action but also reinforces individuals' belief in achievable outcomes. When fear and hope are integrated, the message can elicit a more compelling emotional response than either appeal alone. By guiding audiences from concern to possibility, this approach is expected to enhance pro-environmental intentions, particularly within the context of tourism messaging.

H3: Integrating a combination of hope and fear appeals in environmental video messaging will have a stronger impact on increasing pro-environmental intentions among tourists compared to using them separately.

2.5. The Role of Self-Efficacy in Enhancing Fear Appeals

Ruiter et al. (2014) emphasize that fear appeals are most effective when combined with strong efficacy cues, which empower individuals to take action rather than avoid the message. According to Bandura's theory of self-efficacy, individuals are more likely to engage in a behavior if they perceive themselves as capable of performing it and believe it will lead to the desired outcome (Bandura, 1977). Within the framework of persuasive environmental messaging, self-efficacy enhances the effectiveness of fear appeals by strengthening individuals' confidence in their ability to manage perceived threats (Witte, 1992). The EPPM suggests that fear appeals are most impactful when coupled with efficacy messages that reinforce individuals' belief in their capacity to address the threat (Witte, 1992). This sense of efficacy prevents individuals from feeling overwhelmed by fear, instead

guiding them toward constructive, action-oriented responses. Conversely, when perceived efficacy is low, fear may prompt defensive responses such as denial or avoidance, as individuals turn to emotional coping mechanisms rather than engaging in problem-solving strategies (Witte, 1992).

The EPPM outlines two dimensions of efficacy critical in fear appeals: self-efficacy, which reflects an individual's confidence in performing the recommended behavior, and response efficacy, which pertains to the perceived effectiveness of the behavior in reducing the threat. Protection Motivation Theory (PMT), introduced by Rogers (1975), similarly underscores the importance of self-efficacy in motivating responses to fear-inducing messages. PMT suggests that individuals evaluate both the severity of the threat and their perceived capability to address it, with self-efficacy emerging as a particularly influential factor. Studies have shown that self-efficacy has a substantial impact on protection motivation, indicating that fear appeals combined with efficacy information yield a more compelling and motivating message (Rogers et al., 2000). By enhancing self-efficacy, fear appeals not only highlight the urgency of environmental issues but also provide a clear, actionable pathway for individuals to engage in meaningful behavior change.

While the connection between self-efficacy and fear appeals is well established, the role of self-efficacy in hope-based messaging has also received growing attention. Both constructs emphasize goal-directed thinking and a belief in one's capacity to effect change, suggesting they may operate through overlapping cognitive mechanisms (Bandura, 1997; Snyder, 2002). Zhou and Kam (2016) provide empirical support for this conceptual alignment, demonstrating that hope and general self-efficacy measures loaded onto a single factor and exhibited comparable associations with external variables. This overlap implies that combining hope with self-efficacy alone may lead to redundant motivational effects, potentially diminishing the unique impact each construct offers.

Given this close linkage, using self-efficacy in combination with fear appeals, rather than with hope, may offer a more effective approach. This pairing emphasizes both the urgency of the threat and the individual's ability to take meaningful action, enhancing the motivational impact of the message.

H4: Self-efficacy will enhance the effectiveness of fear appeals in environmental messaging.

2.6. Self-efficacy and the Combination of Hope and Fear Appeals

While combining hope with self-efficacy alone may offer limited added value due to their conceptual overlap (Zhou and Kam, 2016), integrating hope into a framework that already includes fear and self-efficacy offers a more robust approach to environmental messaging. In this configuration, fear communicates the urgency of environmental threats, self-efficacy provides individuals with the confidence to act, and hope reinforces belief in the possibility of positive outcomes. Incorporating self-efficacy into messages that combine fear and hope enhances the persuasive effect by translating emotional responses into concrete behavioral intentions. Bartlett et al. (2022) and Nabi et al. (2018) argue that self-efficacy enhances emotional responses such as hope, which can deepen behavioral engagement. Together, these components create a motivational structure that highlights the necessity of change while simultaneously affirming the feasibility of achieving it (D'Souza et al., 2020; Tao et al., 2023).

This combined approach follows an emotional progression that guides individuals through different stages of motivation. Fear initially alerts audiences to the seriousness and urgency of environmental threats, prompting concern and attention (Witte, 1992). Hope then strengthens this response by presenting a vision of positive and attainable outcomes (Snyder,

2002). Finally, self-efficacy strengthens individuals' belief that their actions are both achievable and effective in addressing the problem (Bandura, 1977). This sequence helps to generate not only motivation but also sustained confidence in the ability to make a difference.

The integration of fear, hope, and self-efficacy is therefore expected to produce a strong motivational effect. Fear captures attention and creates urgency, hope maintains emotional engagement by fostering optimism, and self-efficacy enables individuals to act with conviction. This combination raises awareness, supports goal-directed thinking, and increases the likelihood of long-term pro-environmental behavior. By bringing these elements together, sustainability messages can move individuals from passive concern to proactive and consistent action.

H5: Combining fear and hope appeals with self-efficacy cues will lead to stronger pro-environmental intentions than using either appeal alone with self-efficacy.

2.7. Sustainable Behavior at Home and on Vacation

In examining how tourists engage in more sustainable behavior during vacations, it is essential to consider the connection between pro-environmental actions at home and those adopted while traveling. Previous studies indicate that individuals with strong environmental orientation are more likely to engage in environmentally responsible behaviors in their daily lives (Thøgersen, 2004). Those who prioritize environmental values demonstrate a greater inclination toward sustainability, suggesting that such everyday behaviors may serve as a foundation for receptiveness to sustainability prompts while on vacation (Poortinga & Whitaker, 2018).

However, maintaining these behaviors in tourism contexts can be more complex. The shift from routine life to leisure settings often introduces competing priorities such as

comfort, convenience, and relaxation, which can reduce motivation to act sustainably (Harris & Magrizos, 2021; Wut et al., 2023). This tension contributes to the well-documented attitude–behavior gap, where individuals with strong environmental values do not always act in accordance with them while traveling (Juvan & Dolničar, 2014; Barr et al., 2011). Tourists may also feel disempowered or uncertain when trying to make sustainable choices outside their home environment (Miller et al., 2010).

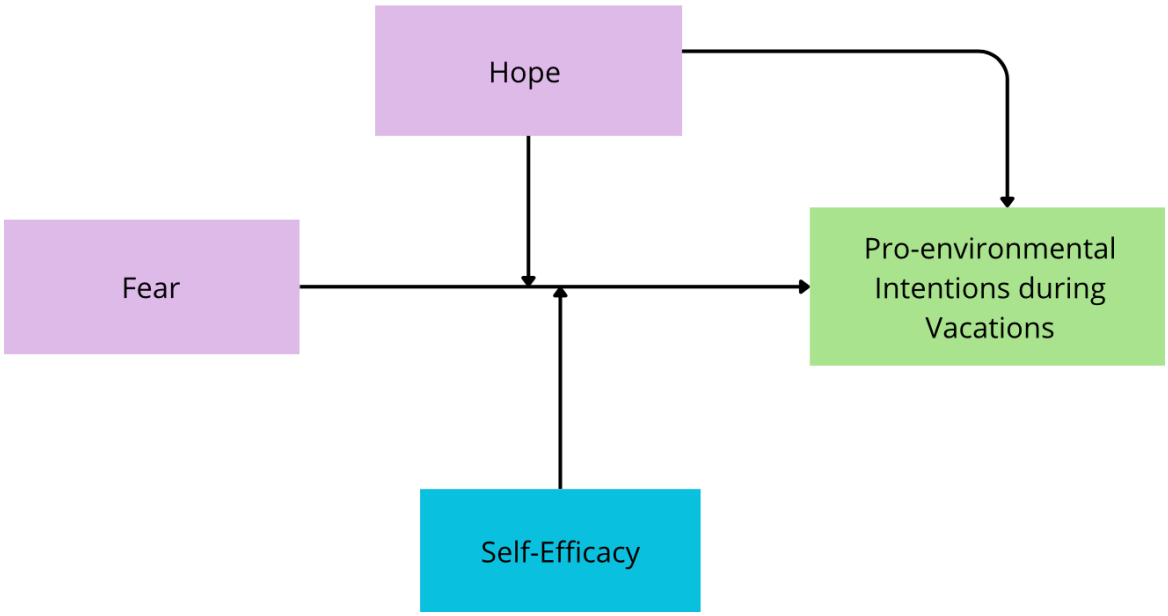
Nevertheless, a carry-over effect from habitual behavior may still influence travel decisions. Awareness of environmental issues and consistent routines at home can create a cognitive framework that supports environmentally conscious choices during vacations. In addition, situational cues such as eco-labels or sustainability certifications may guide tourist behavior, especially when they align with individuals' pre-existing values and habits (Penz et al., 2017). For this reason, sustainable behavior in daily life is included in this study as a control variable, helping to account for baseline environmental tendencies when evaluating the effects of emotional video messaging.

Table 1. Hypothesis overview

Hypothesis	
H1:	Fear appeals in environmental video messaging on social media will increase pro-environmental intentions among tourists more than messages that contain no emotional appeals.
H2:	Hope appeals in environmental video messaging on social media will increase pro-environmental intentions among tourists more than fear appeals.
H3:	Integrating a combination of hope and fear appeals in environmental video messaging will have a more significant impact on increasing pro-environmental intentions among tourists compared to using them separately.
H4:	Self-efficacy will enhance the effectiveness of fear appeals in environmental messaging.
H5	Combining fear and hope appeals with self-efficacy cues will lead to stronger pro-environmental intentions than using either appeal alone with self-efficacy.

Figure 2. Conceptual Model

Conceptual Model of Emotional Framing Effects on Tourists' Pro-environmental Intentions Moderated by Self-efficacy.



3. Methodology

This chapter outlines the methodology employed in the study. It begins with an overview of the research design, followed by a description of the participant recruitment process, sampling methods, and sample characteristics. The next sections explain how the video stimuli were developed, including the integration of emotional appeals and self-efficacy cues. The experimental procedure is then described, detailing how participants were exposed to the stimuli and how data were collected through a structured survey. Lastly, the chapter presents the measurement instruments used to assess pro-environmental intentions and related constructs, including the development and structure of the survey items.

3.1. Research Design

This study employs a 2 × 2 × 2 between-subjects experimental design to investigate tourists' intentions to engage in pro-environmental behaviors during vacations. The research was conducted in Valencia, Spain, where the researcher was based throughout the study period. The experiment was available in both English and Dutch. Dutch was specifically included based on input from collaborating organizations, as Dutch tourists represent a significant portion of the tourist population in Valencia.

The experiment includes three independent variables: hope (present vs. not present), fear (present vs. not present), and self-efficacy (cue vs. no cue). Emotional framing refers to participants being exposed to hopeful, fearful, or combined hope–fear messaging about pro-environmental behaviors. Self-efficacy concerns the inclusion or exclusion of video content showing how easy and feasible these behaviors are, aiming to enhance participants' perceived ability to act.

Sustainable behavior in daily life is included as a control variable to account for participants' existing environmental habits, which may influence their intention to act sustainably while on vacation.

3.2. Stimuli design

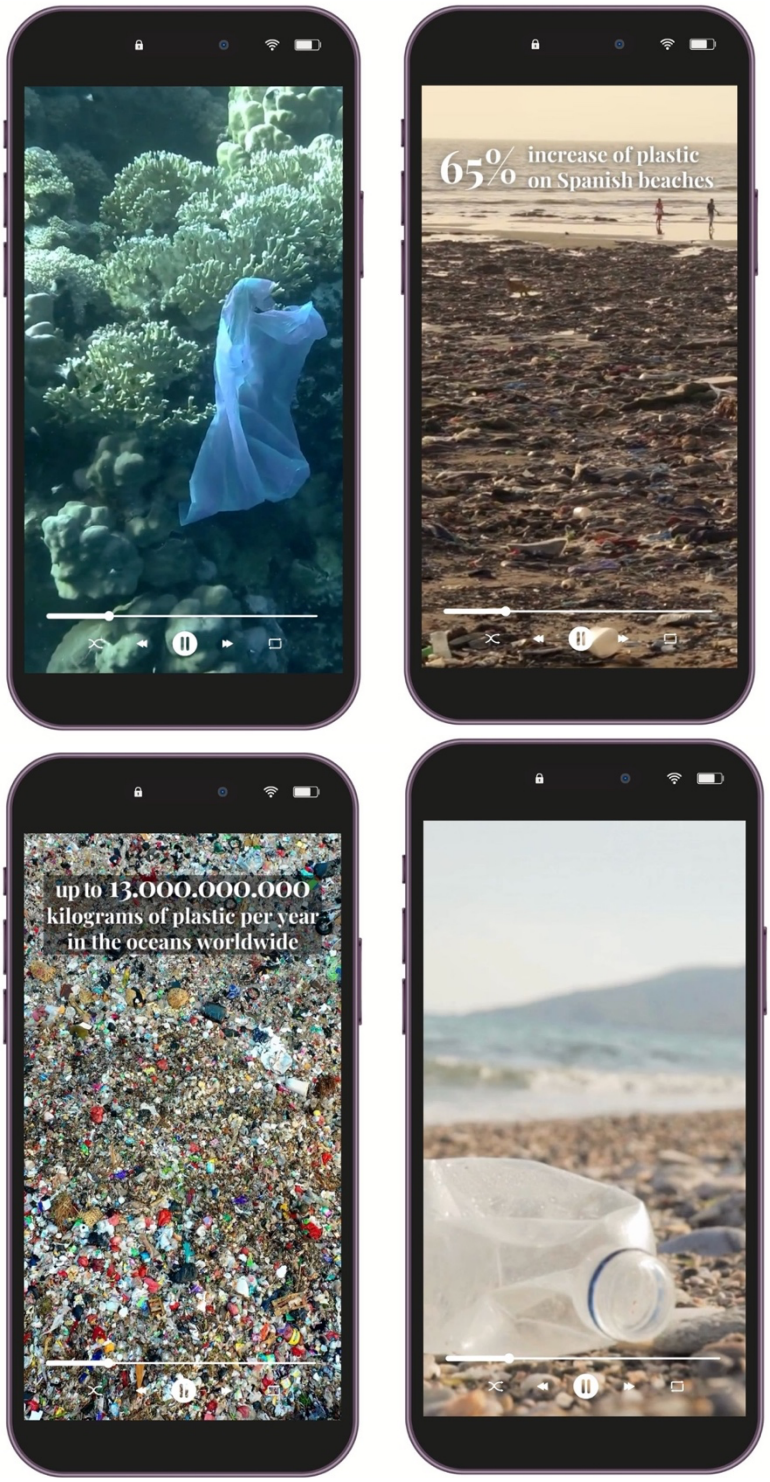
To examine the effects of emotional framing and self-efficacy, short videos were developed and used as experimental stimuli. These videos were created using royalty-free footage and carefully edited to evoke specific emotional tones. Designed to resemble Instagram Reels, the stimuli aimed to elicit distinct emotional responses: fear, hope, a combination of both, or a neutral condition. All videos featured a consistent pollution-related beach theme. The emotional framing varied across conditions: fear videos depicted polluted beaches and oceans, while hope videos presented the same locations in clean and restored states. The combined videos integrated identical footage from both emotional conditions. This approach ensured content uniformity while maximizing the intended emotional impact.

The development of the stimuli followed a structured design process intended to test the influence of emotional framing and efficacy cues on tourists' intentions to engage in sustainable behavior while on vacation. A pretest was conducted with eight participants through brief interviews to assess the clarity of the emotional framing and the perceived effectiveness of the content. Participants indicated whether the videos evoked fear or hope and suggested improvements to enhance emotional clarity. Additional feedback was gathered on visual and textual comprehensibility. Based on this input, final adjustments were made to the music and on-screen text prior to the main study.

3.2.1. Fear appeal

To evoke fear regarding the current state of the environment, one video featured dramatic music alongside scenes of pollution that illustrated the severe consequences of environmental neglect, with a specific focus on the impact of tourism in Spain. Screenshots from the video are provided in Figure 3, and links to the full videos are included in Appendix II. The video opened with footage of a plastic trash bag floating in the ocean, surrounded by fish, followed by a polluted beach where a dog ran across visible litter. This scene was accompanied by the text, “65% increase in plastic on Spanish beaches.” The sequence then transitioned to an overview of a large accumulation of trash, accompanied by the text, “Up to 13 billion kilograms of plastic enter the oceans worldwide each year.” Designed to convey a sense of urgency, the video depicted environmental degradation and threats to local wildlife resulting from tourism-related waste. It concluded with a close-up of a plastic bottle on a beach, symbolizing how seemingly minor actions contribute to widespread environmental harm.

Figure 3. Selected Screenshots from the Fear Appeal Video



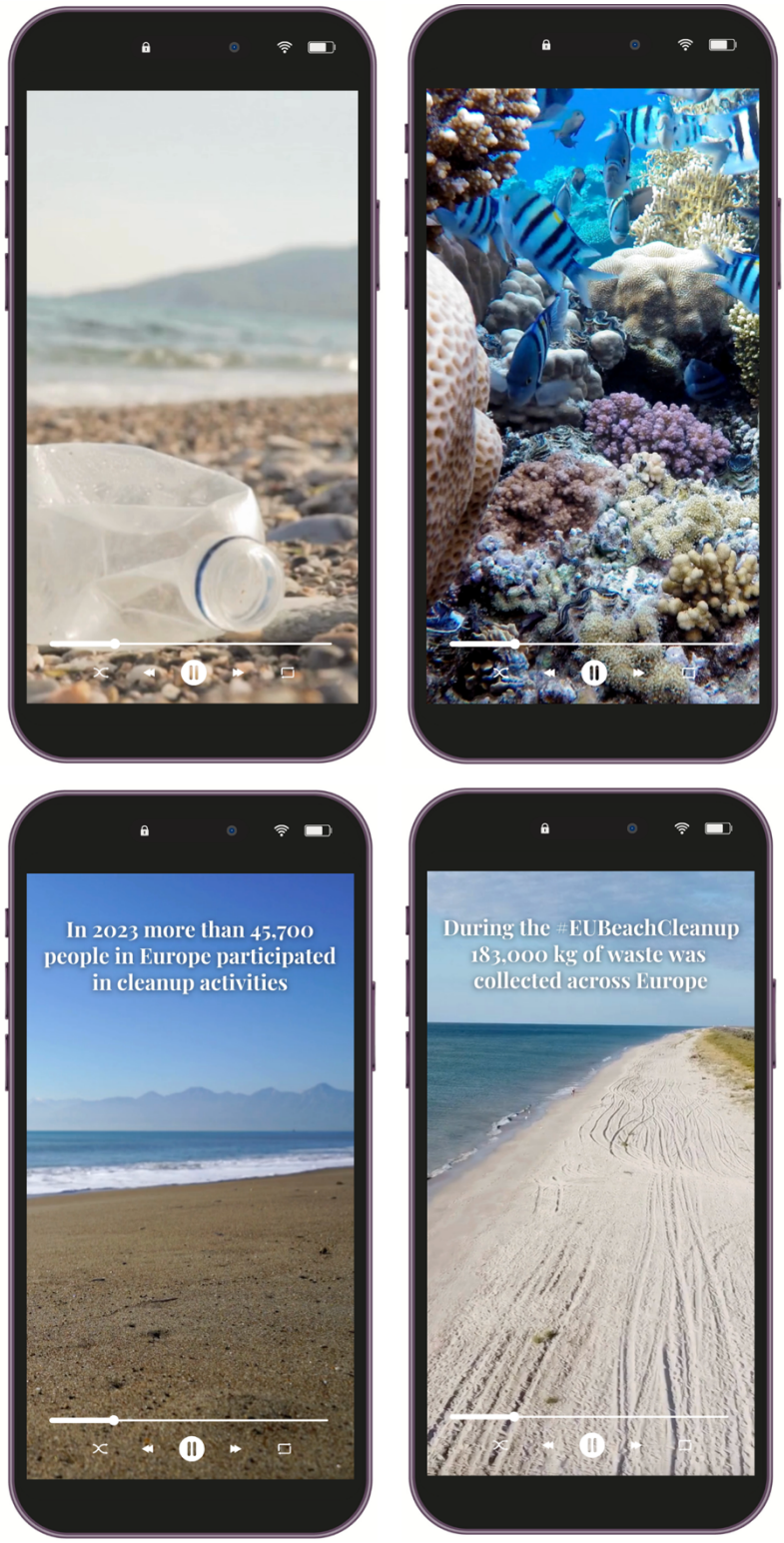
Note. The screenshots are shown from left to right in chronological order, from shot 1 to final shot 4.

3.2.2. Hope video

To inspire hope for environmental change, this video featured uplifting music and visuals of thriving natural habitats, illustrating the positive outcomes of sustainable behaviors. The portrayal was designed to evoke a sense of optimism and possibility, encouraging viewers to believe in a more sustainable environmental future. Screenshots from the video are provided in Figure 4, and links to the full videos are included in Appendix II.

Following the structure of the fear-inducing video, the hope-focused version opened with the same close-up of a plastic bottle on a beach, establishing a shared thematic baseline. This was followed by footage of a pristine ocean with swimming fish and a clean beach, accompanied by the text: “In 2023, over 45,700 people in Europe participated in cleanup activities.” To mirror the aerial perspective used in the fear video, the hope video included a helicopter view of a vast, clean beach surrounded by green landscapes and wildlife, displaying the text: “During the #EUBeachCleanup, 183,000 kg of waste was collected across Europe.” These textual elements paralleled those in the fear condition but were presented in a more positive and hopeful context.

Figure 4. Selected Screenshots from the Hope Appeal Video



Note. The screenshots are shown from left to right in chronological order, from shot 1 to final shot 4.

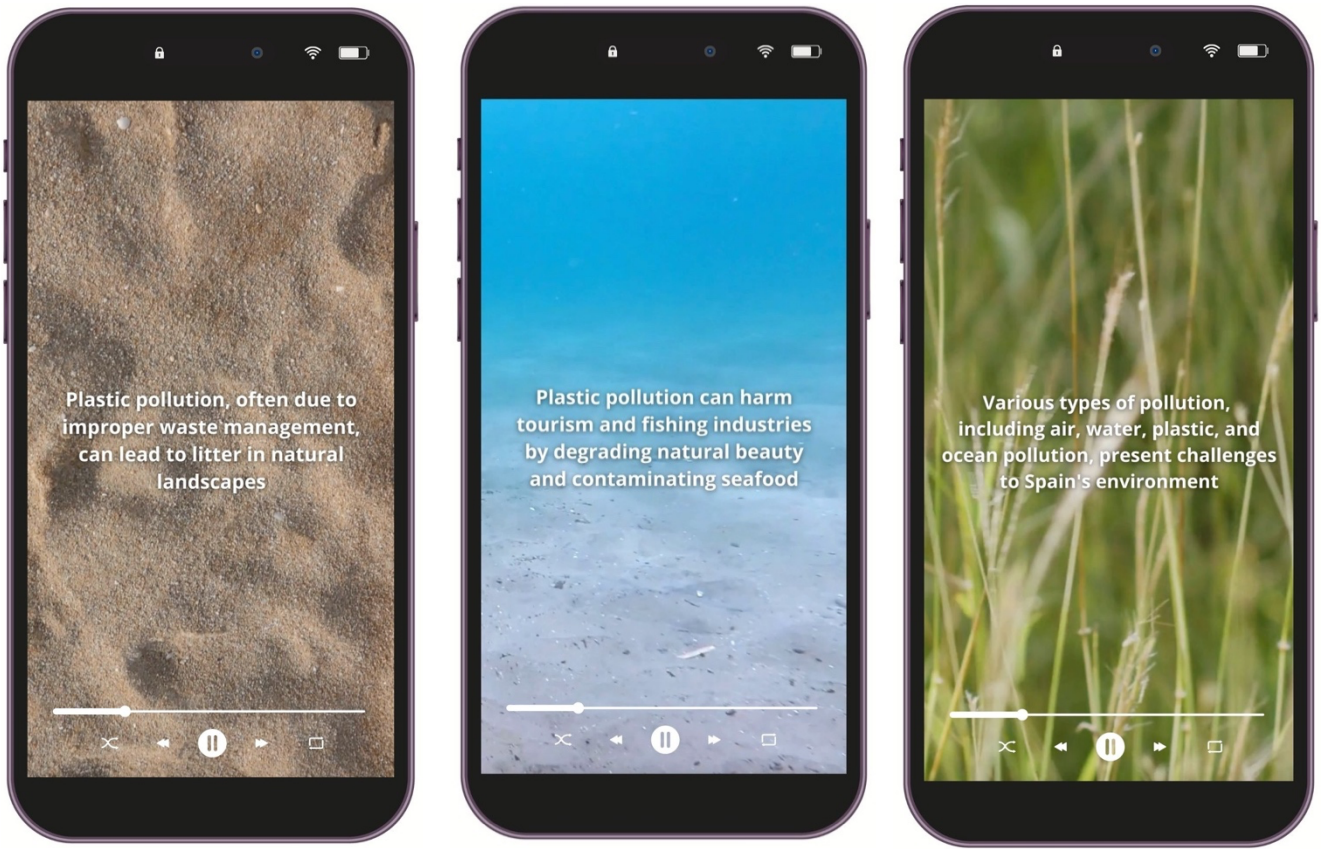
3.2.3. Fear and Hope video

For the combined fear and hope video, footage from the previously described fear and hope conditions was integrated into a single sequence. This version began with the same initial scenes, text, and dramatic music from the fear video, which then gradually transitioned into the uplifting visuals, audio, and messaging used in the hope video. The intention behind this sequencing was to first evoke a sense of urgency and concern, followed by a hopeful message that emphasizes the possibility of positive environmental change.

3.2.4. Control video

The control video, intentionally designed without emotional framing, presented factual information about environmental issues and sustainable tourism practices. Instead of background music, it featured natural ambient sounds, such as wind, to evoke a neutral and calming atmosphere. The video comprised close-up footage of natural elements accompanied by informative text. It opened with an unfocused close-up of tall grass swaying in the wind, paired with the text: "Various types of pollution, including air, water, plastic, and ocean pollution, pose challenges to Spain’s environment." This was followed by a close-up of sand with the text: "Plastic pollution, often caused by improper waste management, can lead to litter in natural landscapes." The final scene showed an underwater close-up of sand and clear blue water, displaying the text: "Plastic pollution can harm tourism and fishing industries by degrading natural beauty and contaminating seafood."

Figure 5. Selected Screenshots from the Control Video



Note. The screenshots are shown from left to right in chronological order, from shot 1 to final shot 3.

3.2.5. Addition of Self-efficacy as moderator

Each type of video (fear, hope, combination, and control) was produced in two versions: one without a self-efficacy appeal and one with an added self-efficacy cue as a moderating element. In the self-efficacy versions, an additional scene followed the close-up of the plastic bottle. This scene depicted a tourist in Valencia properly disposing of the bottle in a designated recycling bin for plastic waste, accompanied by the text “It’s so easy to make a difference.”

This added segment was designed to illustrate the simplicity and feasibility of engaging in sustainable behaviors. It featured original footage captured by the researcher to showcase recognizable beach locations in Valencia and clearly marked recycling infrastructure, thereby enhancing relatability and perceived attainability. Screenshots from this added scene are shown in Figure 6, and links to the full videos are available in Appendix II.

Figure 6. Selected Screenshots from self-efficacy manipulation

Note. The screenshots are shown from left to right in chronological order, from shot 1 to final shot 3.

3.3. Research sample

Participants in this study were tourists vacationing in Valencia, recruited through convenience sampling in collaboration with local tourism companies. Although this non-random sampling method posed a potential threat to validity, random assignment to one of the eight experimental groups and efforts to recruit a diverse sample helped enhance the generalizability of the findings.

The target sample size was set at 250 participants to ensure a balanced design across the eight experimental conditions, with approximately 30 participants per group. This target was determined through a priori power analysis using G*Power, assuming a medium effect size of 0.25, an alpha level of 0.05, and a statistical power of 0.80 (Kang, 2021).

Recruitment followed a multi-channel strategy. The researcher joined guided city tours, informed tourists about the study, and invited them to participate at the end of each tour. Informational cards with QR codes linking to the online experiment were distributed (Nguyen, 2022). Emails containing the survey link were also sent to tourists, and local tourism companies promoted the study via their social media platforms. The researcher additionally approached tourists in public areas to extend participation invitations.

Eligibility criteria required participants to be at least 18 years old, currently engaged in vacation activities, and proficient in either English or Dutch. These criteria ensured compliance with legal age of consent regulations (Consent to Use Data on Children, 2022) and helped improve the reliability of the collected data.

A total of 428 individuals initially participated in the survey. After applying exclusion criteria, such as lack of informed consent, not being a tourist at the time of the study, being under 18 years old, or completing less than 50 percent of the survey, the final sample included 237 valid responses. Participants were assigned to one of the eight video conditions, with group sizes ranging from 23 to 35 participants.

The final sample showed a gender imbalance, with women comprising 74.3 percent of the sample and men 24.9 percent. Participant ages ranged from 18 to 84 years, with a mean age of 39. Regarding educational background, 33.3 percent held an upper secondary qualification, 29.5 percent had a bachelor's degree or equivalent, and 19 percent held a master's degree. The majority of participants were from the Netherlands, representing 50 percent of the sample, followed by participants from Poland at 22 percent.

In terms of vacation duration, 41.4 percent reported staying in Valencia for between two and four days. With regard to travel history, 39.2 percent had never traveled outside Europe, while 34.2 percent had visited the United States and 31.2 percent had traveled to Asia. A full demographic overview is provided in Appendix III.

3.2. Procedure

At the beginning of the experiment, participants were welcomed and provided with an overview of the study's purpose, with the option to choose the experimental environment in either English or Dutch. Participants were informed of their right to contact the researcher for additional information or to withdraw their data at any time. They were then asked to provide informed consent by clicking on a button or choosing to decline. Those who either indicated they were not currently tourists or declined consent were redirected to a closing section, where they were thanked for their participation.

For participants who identified as tourists, the survey began with demographic questions, followed by a section measuring their existing pro-environmental behaviors at home. This initial survey served to record baseline responses prior to any experimental manipulation, ensuring that responses were unaffected by the subsequent video content. Participants were then randomly assigned to one of the experimental conditions, each featuring a video that varied by emotional content (fear, hope, a combination of both, or

neutral) and by the presence or absence of self-efficacy content demonstrating easily adoptable sustainable behaviors.

After watching the assigned video, participants completed a survey assessing their intentions to engage in pro-environmental behaviors during their vacations, as well as their perceived self-efficacy. Each of the four survey sections included nine statements, rated on a 5-point Likert scale ranging from "totally agree" to "totally disagree." The experiment concluded with an open-ended question, giving participants the opportunity to share additional insights on the topic. Throughout the survey, participants were thanked for their time. Upon completion, they received a link to download an e-book about Valencia, normally priced at €9.95, as a token of appreciation. The entire experiment took approximately 5 to 10 minutes to complete.

Social desirability bias may have occurred if participants adjusted their responses to align with perceived social norms or expectations. To mitigate this risk, the study ensured participant anonymity by not collecting any identifiable information. Additionally, participants could complete the study at their own convenience, using a QR code or link, which reduced pressure to respond in a socially desirable way.

3.3. Measures

The survey sections include multiple scales designed to assess constructs related to pro-environmental behavior. Each item is presented as a statement and rated on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The items, adapted from prior research, have been modified or developed specifically to align with the objectives of this study. In addition to measures of pro-environmental behavior at home, during vacation, and self-efficacy, demographic questions address age, gender, country of residence,

education level, and prior travel outside of Europe. Detailed descriptions of the items for each construct are provided in the subsequent section.

3.3.1. Pro-environmental behavior at home

To account for participants' existing sustainability habits, daily pro-environmental behavior at home was measured and treated as a control variable in the analysis. The survey included nine items adapted from Bilynets and Cvelbar's (2022) research on tourists' pro-environmental behaviors in both everyday life and travel contexts. Participants indicated their agreement with statements such as: "In my daily life, I try to use reusable (plastic, glass, or metal) bottles for drinking water whenever possible," "In my daily life, I try to use reusable bags when I go shopping," and "I avoid using single-use plastic utensils in my daily life as much as possible." A full list of the items is provided in Appendix I. The Cronbach's alpha coefficient for this scale was 0.87, indicating good reliability and strong internal consistency. The mean score for at-home behavior was 3.86 (SD = 0.72) on a 5-point scale, suggesting a relatively high level of engagement in pro-environmental practices in daily life.

3.3.2. Intentions to behave sustainably during vacations

After participants viewed the video, the dependent variable of pro-environmental intentions during vacations was assessed. To measure this construct, the survey included nine self-constructed items inspired by Ioannou et al. (2013) and Bilynets and Cvelbar (2022), and adapted to the vacation context.

Participants were asked to indicate their agreement with statements such as: "I plan to purchase larger water bottles to minimize plastic waste during my vacations," "I aim to use reusable bags (e.g., textile) or reuse purchased (plastic or paper) bags for shopping during my vacations," and "I intend to avoid leaving any trash behind after a day at the beach." The

Cronbach's alpha for this scale was 0.93, indicating excellent reliability and a very high level of internal consistency among the items. The mean score for intentions to engage in sustainable behaviors during vacations was 3.85 (SD = 0.84) on a 5-point scale, reflecting moderate to high agreement with these intentions.

3.3.3. Self-efficacy

To serve as a manipulation check, self-efficacy was measured using nine items based on Schwarzer and Jerusalem's (1995) Generalized Self-Efficacy Scale and the adaptation by Yoong et al. (2018) in the context of pro-environmental behavior. Some of the statements used in this study included: "I can easily practice pro-environmental behaviors, such as recycling and not leaving waste, during my vacations," "I can overcome obstacles that hinder pro-environmental behavior, such as finding recycling bins and using reusable bottles, during my vacation if I invest the necessary effort," and "I am confident that I can properly dispose of waste when I am at the beach." The Cronbach's alpha for this scale was 0.96, indicating excellent reliability and a very high level of internal consistency among the items. The mean score for self-efficacy was 4.01 (SD = 0.95) on a 5-point scale, reflecting high confidence in participants' ability to engage in sustainable practices.

4. Results

4.1 Hypotheses Testing

This section presents the results of the statistical analyses conducted to test the hypotheses formulated in this study. The analyses included a factorial ANCOVA, which was used to examine both the main and interaction effects of emotional appeals and self-efficacy, while controlling for daily pro-environmental behavior. Additionally, a one-way ANOVA was performed to compare specific condition groups in which self-efficacy was present.

Descriptive statistics, including means and standard deviations for each condition, are presented in Table 2. Each hypothesis is discussed in its own subsection, beginning with a brief explanation of the analysis approach, followed by descriptive results, statistical test outcomes, and a conclusion on whether the hypothesis was supported. All analyses were conducted using RStudio.

Table 2:

Means and Standard Deviations for Pro-Environmental Intentions by Condition

Condition	Mean	Standard Deviation
No Emotion	4.00	0.80
Fear	4.05	0.76
Hope	3.92	0.83
Hope + Fear	3.98	0.79
No Emotion + Self-Efficacy	4.09	0.67
Fear + Self-Efficacy	4.29	0.81
Hope + Self-Efficacy	4.15	0.81
Fear + Hope + Self-Efficacy	4.02	0.94

4.1.1 Fear vs. No Emotions

To test Hypothesis 1, which proposed that fear-based appeals in environmental video messaging would enhance tourists' pro-environmental intentions compared to videos with no emotional framing, the relevant main effect was examined within a factorial ANCOVA. The model included fear, hope, and self-efficacy as between-subjects factors, while statistically controlling for daily pro-environmental behavior at home.

The analysis revealed no significant main effect of fear, $F(1, 228) = 0.14$, $p = .714$, indicating that exposure to fear-based messaging did not significantly influence tourists' intentions to act pro-environmentally compared to emotionally neutral content. This suggests that fear alone, without additional supportive elements, may not be sufficient to motivate sustainable behavior in a tourism context.

Descriptive statistics showed that participants exposed to fear appeals reported slightly higher intention scores ($M = 4.05$, $SD = 0.76$) than those in the no-emotion condition ($M = 4.00$, $SD = 0.80$), but this difference was not statistically significant. Therefore, Hypothesis 1 was not supported.

4.1.2 Hope vs. Fear

To test Hypothesis 2, which posited that hope-based appeals in environmental video messaging would lead to higher pro-environmental intentions among tourists compared to fear-based appeals, the results from the same factorial ANCOVA were examined. This comparison focused on the main effect of hope, while statistically controlling for pro-environmental behavior at home.

The results indicated that hope appeals did not significantly differ from fear appeals in influencing pro-environmental intentions. The main effect of emotional appeal was not significant, $F(1, 228) = 0.36$, $p = .556$, suggesting that the type of emotional appeal (hope vs.

fear) did not meaningfully affect participants' intentions to engage in pro-environmental behavior during their vacation.

Descriptive statistics showed that participants in the hope appeal condition reported slightly lower pro-environmental intention scores ($M = 3.92$, $SD = 0.83$) compared to those exposed to fear appeals ($M = 4.05$, $SD = 0.76$). This small difference was not statistically significant, and therefore, Hypothesis 2 was not supported.

4.1.3. Interaction of hope and fear

To test Hypothesis 3, which posited that integrating both hope and fear appeals in environmental video messaging would lead to higher pro-environmental intentions among tourists compared to using these appeals separately, results from the same factorial ANCOVA were examined. The model included fear, hope, and self-efficacy as between-subjects factors, while statistically controlling for daily pro-environmental behavior at home. This part of the analysis focused on the interaction effect between hope and fear. In addition to inspecting the interaction term from the ANCOVA model, a planned comparison was conducted using the emmeans package in R to directly compare participants exposed to the combined hope-and-fear condition with those exposed to either hope or fear alone.

The interaction effect between hope and fear was not statistically significant, $F(1, 228) = 0.36$, $p = .652$. Similarly, the planned comparison showed no significant differences between the integrated condition ($M = 3.98$, $SD = 0.79$) and either the hope-only condition ($M = 3.92$, $SD = 0.83$) or the fear-only condition ($M = 4.05$, $SD = 0.76$). This suggests that the combination of emotional appeals did not lead to stronger pro-environmental intentions than using either appeal individually. Therefore, Hypothesis 3 was not supported.

4.1.4. Interaction Between Self-Efficacy and Emotional Appeals

To test Hypothesis 4, which proposed that self-efficacy enhances the effectiveness of fear appeals in environmental messaging, a factorial ANCOVA was conducted. The model included Hope, Fear, and Self-Efficacy as between-subjects factors, with daily pro-environmental behavior at home included as a covariate.

The primary effect of interest was the interaction between emotional appeal and self-efficacy. The analysis revealed no significant interaction between Fear and Self-Efficacy, $F(1, 228) = 0.34$, $p = .561$, nor between Hope and Self-Efficacy, $F(1, 228) = 0.26$, $p = .612$. These results indicate that the inclusion of self-efficacy cues did not significantly enhance the effect of either emotional appeal on pro-environmental intentions.

Descriptive statistics showed that participants exposed to fear-based messages with self-efficacy cues ($M = 4.03$, $SD = 0.78$) reported similar levels of intention as those exposed to hope-based messages with self-efficacy cues ($M = 3.98$, $SD = 0.79$). These small numerical differences were not statistically significant. Therefore, Hypothesis 4 was not supported.

4.1.5 Combination of Fear, Hope, and Self-Efficacy

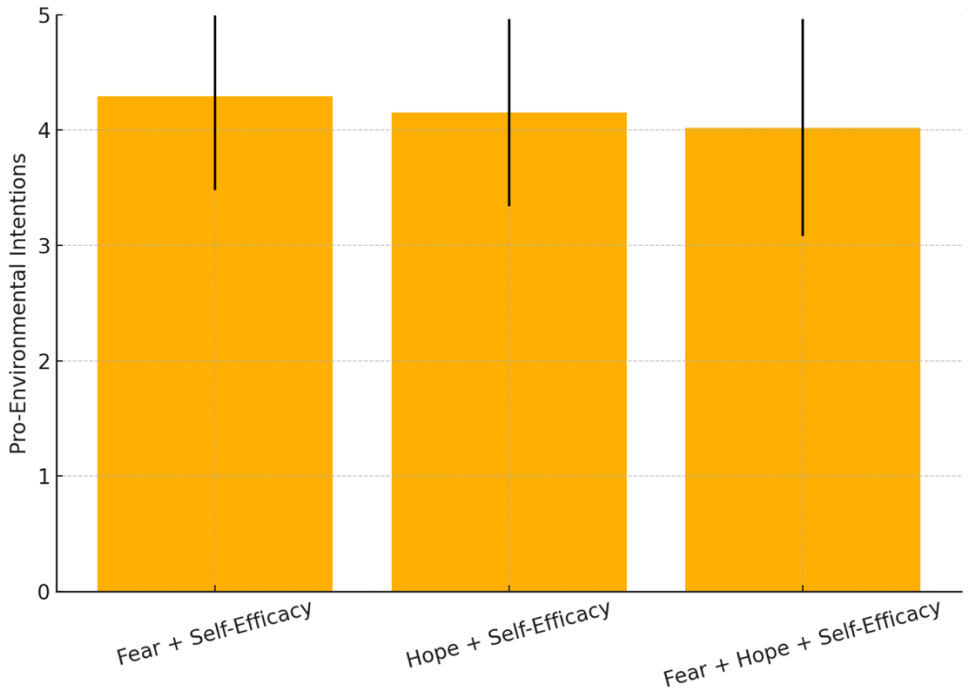
To test Hypothesis 5, which posited that the combination of fear and hope appeals, when accompanied by self-efficacy cues, would lead to stronger pro-environmental intentions compared to either appeal alone with self-efficacy, a one-way ANOVA was conducted. The analysis focused on three experimental conditions in which self-efficacy was present: fear plus self-efficacy, hope plus self-efficacy, and the combined fear and hope plus self-efficacy condition. A one-way ANOVA was appropriate because this hypothesis targeted a specific subset of participants, isolating the effect of emotional framing while holding self-efficacy constant. Unlike factorial designs that assess interactions across all variables, this approach enabled a direct comparison of mean pro-environmental intentions among the three groups

receiving self-efficacy cues, allowing for a focused evaluation of the additive value of combining fear and hope within an efficacy-enhanced context.

The results revealed a significant main effect of condition, $F(2, 234) = 10.24$, $p < .001$, indicating that the type of emotional appeal in the presence of self-efficacy cues significantly influenced participants' pro-environmental intentions. Participants in the fear plus self-efficacy condition reported the highest pro-environmental intentions ($M = 4.29$, $SD = 0.81$), followed by the hope plus self-efficacy condition ($M = 4.15$, $SD = 0.81$), and finally the combined fear and hope plus self-efficacy condition ($M = 4.02$, $SD = 0.94$). A visual representation of these findings is provided in Figure 7, which displays mean intention scores across the three conditions, with error bars representing standard deviations to illustrate variability.

Although the overall effect was statistically significant, the pattern of means does not support Hypothesis 5. The combined fear and hope condition did not result in the highest pro-environmental intentions. Instead, the fear plus self-efficacy condition produced the strongest effect. This suggests that combining emotional appeals does not necessarily enhance persuasive impact when self-efficacy cues are present.

Figure 7. Pro-Environmental Intentions by Condition (Self-Efficacy Present)



4.1.6. Daily Pro-Environmental Behavior

Although not included as a formal hypothesis, daily pro-environmental behavior was incorporated as a control variable to account for individual differences in sustainability-related habits. This variable was assessed within the factorial ANCOVA model to determine whether participants' self-reported sustainable behavior at home was associated with their intention to behave sustainably while on vacation.

The analysis revealed a significant positive effect of daily pro-environmental behavior on vacation-related intentions, $F(1, 223) = 38.06$, $p < .001$, indicating that individuals who regularly engage in sustainable practices at home are more likely to express intentions to act sustainably during their holidays.

Table 3:

Hypotheses overview and Results

Hypothesis		Results
H1:	Fear appeals in environmental video messaging on social media will increase pro-environmental intentions among tourists more than messages that contain no emotional appeals.	Rejected
H2:	Hope appeals in environmental video messaging on social media will increase pro-environmental intentions among tourists more than fear appeals.	Rejected
H3:	Integrating a combination of hope and fear appeals in environmental video messaging will have a more significant impact on increasing pro-environmental intentions among tourists compared to using them separately.	Rejected
H4:	Self-efficacy will enhance the effectiveness of fear appeals in environmental messaging.	Rejected
H5:	Combining fear and hope appeals with self-efficacy cues will lead to stronger pro-environmental intentions than using either appeal alone with self-efficacy	Rejected

5. Discussion

The final chapter of this study discusses the results, outlines the limitations, and offers recommendations for future research. It concludes with a concise summary of the key findings.

5.1. Discussion of results

This study investigated the effectiveness of emotional appeals (fear, hope, and their combination) and self-efficacy in promoting pro-environmental intentions among tourists. Contrary to expectations and prior research in environmental communication (O'Neill & Nicholson-Cole, 2009; Chadwick, 2015; Nabi, 2015), none of the emotional framing strategies significantly increased pro-environmental intentions. Similarly, the hypothesized enhancing effect of self-efficacy on fear-based messaging was not observed. These findings suggest that emotional messaging may have limited persuasive impact in tourism contexts, where psychological and situational factors likely play a more dominant role.

One possible explanation lies in the concept of psychological distance. Tourists may perceive environmental threats as temporally, geographically, or socially remote from their own experience (Spence et al., 2012). Since vacations are typically associated with relaxation and a break from daily responsibilities, individuals may be less inclined to cognitively engage with messages that emphasize threat or personal accountability.

The limited effect of hope-based appeals may also stem from a perceived lack of personal agency. Even when messages highlight positive and attainable outcomes, tourists might question their ability to contribute meaningfully within the short timeframe of a vacation. This interpretation aligns with findings by Nabi and Myrick (2019), who note that hope appeals can falter when recipients doubt the efficacy of their own actions.

Messages that combined fear and hope with self-efficacy cues also failed to enhance pro-environmental intentions. Surprisingly, participants exposed to this combination reported slightly lower intention scores than those who received either fear or hope appeals alongside efficacy cues. This counterintuitive pattern may result from mixed emotional signals, which can reduce message clarity and disrupt coherence. When individuals encounter competing emotional cues, they may struggle to interpret and internalize the intended message.

A closer examination of self-efficacy scores across conditions revealed that participants generally reported high levels of perceived ability to act sustainably, with mean scores above 4 on a 5-point scale in all groups. This suggests a potential ceiling effect, which may have limited the influence of the self-efficacy manipulation. That is, participants may have already believed they were capable of acting sustainably, leaving little room for the intervention to enhance their perceived efficacy. Additionally, even when self-efficacy is high, situational barriers such as unfamiliar environments or limited time may prevent individuals from translating intention into behavior.

Importantly, the most consistent predictor of pro-environmental intentions was prior sustainable behavior. Participants who reported engaging in environmentally responsible practices at home were more likely to express similar intentions while traveling. This finding supports earlier research emphasizing the role of habits and personal values in shaping sustainability-related behavior across contexts (Steg & Vlek, 2009; Kaiser & Schultz, 2009).

Taken together, these findings challenge the relevance of traditional persuasion models, such as the Extended Parallel Process Model (EPPM), in tourism settings. Emotional and cognitive engagement with sustainability messages appears to be highly context-dependent, highlighting the need for more adaptive, context-sensitive theoretical approaches.

5.2. Limitations

Although validated scales were used to measure pro-environmental intentions and self-efficacy, self-reported data carry the risk of social desirability bias. Despite steps to reduce this, such as ensuring anonymity and voluntary participation, it is possible that some participants overreported their willingness to act sustainably. In addition, the study measured behavioral intentions rather than actual behavior, which introduces uncertainty about whether stated intentions would translate into real-world action. However, while intentions are not perfect predictors of behavior, research suggests that the absence of intention is a strong indicator that the behavior is unlikely to occur (Fishbein and Ajzen, 2010; Sheeran, 2002). Future studies could address this limitation by incorporating behavioral tracking methods, such as observational studies or digital monitoring.

Another limitation relates to participants' engagement with the experimental materials. Several individuals reported being unwilling or unable to activate the audio, particularly in outdoor or beach settings where background noise interfered with listening. As a result, they may not have fully experienced the emotional content of the videos, reducing the potential impact of the manipulation. While this may be viewed as a methodological constraint, it also reflects an important contextual reality. Tourists often consume content in informal, distracting environments. This study's decision to collect data in a naturalistic setting rather than a laboratory was deliberate, aiming to enhance ecological validity and better reflect how travelers encounter messaging in real-life conditions. Rather than a flaw, this choice highlights a key insight. For communication strategies to be effective in tourism contexts, they must be designed to function within the constraints of casual, fragmented media use.

5.3. Implications for Theory and Practice

Although validated scales were used to measure pro-environmental intentions and self-efficacy, self-reported data carry the risk of social desirability bias. Although anonymity and voluntary participation were emphasized, some participants may still have overreported their willingness to act sustainably. In addition, the study assessed behavioral intentions rather than observed behavior, introducing uncertainty regarding the translation of intention into actual action. However, while intentions are not perfect predictors of behavior, research suggests that the absence of intention is a strong indicator that the behavior is unlikely to occur (Fishbein and Ajzen, 2010; Sheeran, 2002). Future studies could address this limitation by incorporating behavioral tracking methods, such as observational research or digital monitoring.

Another limitation concerns participants' engagement with the experimental materials. Several individuals reported being unwilling or unable to activate the audio, particularly in outdoor or beach settings where background noise interfered with listening. Consequently, they may not have fully absorbed the emotional content of the videos, which could have diminished the intended impact of the experimental manipulation. While this may be viewed as a methodological constraint, it also reflects an important contextual reality. Tourists often consume media in informal, distracting environments. The study's decision to collect data in a naturalistic setting rather than a laboratory was intentional, aiming to enhance ecological validity and better reflect how travelers engage with messaging in real-life conditions. Rather than a methodological flaw, this decision underscores a critical insight: for communication strategies to be effective in tourism contexts, they must be designed to function within the constraints of casual, fragmented media use.

5.4. Conclusion

This study contributes to the understanding of sustainability communication in tourism by examining the role of emotional appeals and self-efficacy in shaping pro-environmental intentions. The findings reveal that neither fear-based nor hope-based emotional messaging significantly influenced tourists' sustainable intentions. Moreover, perceived self-efficacy did not enhance the effectiveness of these appeals.

The strongest predictor of pro-environmental intentions was individuals' habitual behavior at home, suggesting that personal values and ingrained routines are more influential than externally delivered emotional messages. These results indicate that social media-based communication strategies, particularly those relying on emotional framing, may have limited impact within a tourism context.

Importantly, these findings enhance the theoretical and practical understanding of message effectiveness in an applied, ecologically valid setting. Demonstrating what does not influence behavior is equally valuable, as it guides the development of more context-sensitive strategies that align with tourists' motivations, circumstances, and behavioral dispositions.

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Appendix A: Use of Artificial Intelligence

In the development of this thesis, the student used ChatGPT as a supportive tool for data analysis and academic writing. Specifically, the AI was employed to assist with generating R code, organizing and interpreting statistical results, improving grammatical accuracy, and enhancing the clarity of written expression. All AI-generated content was thoroughly reviewed, edited, and adapted by the author, who takes full responsibility for the final work.

Appendix I: Experiment survey

Welcome to the Study!

Dear Participant,

You are invited to participate in a master's thesis study conducted by a candidate from the Faculty of Behavioral, Management, and Social Sciences (BMS) at the University of Twente, The Netherlands.

This research focuses on video content related to sustainability among tourists.

Procedure:

If you agree to participate, you will be asked to:

• Watch a short video (approximately 30 seconds).

• Complete a survey.

Filling out the survey and watching the video will take approximately 5-10 minutes.

Your participation is completely voluntary. The questions are general and avoid sensitive topics. Your answers will be stored securely, and your information will remain confidential and entirely anonymous.

Your participation will be of great value to this study.

As a gesture of appreciation for your participation, you will receive a complimentary e-book guide to Valencia, at the end of the survey.

For further information, you can contact the researcher at: p.wielgus@student.utwente.nl

You may also contact the Ethics Committee of the University of Twente for any complaints regarding this study: ethicscommittee-hss@utwente.nl

At the end of the survey, you will be fully debriefed on the specific aim of the master's thesis.

Consent:

• By clicking "I consent, begin the study," you agree to participate in this study, confirming that you have read and understood the information provided, and consent to your anonymous data being used for research purposes.

• If you do not consent, select "I do not consent, I do not wish to participate," and you will be directed to the end of the survey without participating.

Demographics

Are you a tourist at the moment?

(If not, thank you for your time. You will be redirected to the end of the survey)

- *Yes*
- *No*

How long have you been on vacation so far?

- *It's my first day*
- *2-4 days*
- *4-7 days*
- *More than a week*
- *More than 2 weeks*

Which gender do you identify with?

- *Female*

- *Male*
- *Other*
- *Prefer not to say*

How old are you?

What is your education level? (Please select the last completed stage)

- *No schooling*
- *Primary education*
- *Lower secondary education*
- *Upper secondary education*
- *Bachelor's or equivalent stage of education*
- *Master's or equivalent stage of education*
- *Doctoral or equivalent level*

In which country do you currently reside?

Have you ever traveled outside of Europe? If yes, where?

- *Yes, Asia*
- *Yes, United States*
- *Yes, South America*
- *Yes, Africa*
- *Yes, Australia*

- *Yes, Antarctica*
- *No, only Europe*

Statements:

Totally disagree, Disagree, Neutral, Agree, Totally Agree

At home behavior

The following statements are about how you behave at home. To what extent do you agree or disagree with the following statements?

1. In my daily life, I try to use reusable (plastic, glass, or metal) bottles for drinking water as much as possible.
2. In my daily life, I try to use reusable bags when I go shopping.
3. I avoid using single-use plastic utensils in my daily life as much as possible.
4. In my daily life, I recycle as much of my trash as possible.
5. I try to reuse items such as containers and packaging in my daily life.
6. I tend to choose products with minimal plastic packaging in my daily life.
7. At home, I reduce energy consumption by turning off lights and unplugging electronics when not in use as much as possible.
8. At home, I tend to take short showers.
9. When I am in my hometown, I make an effort to properly dispose of trash when I am outside in public areas.

Please watch the following video with the audio on.

After watching the video, scroll down and click on the yellow button on the right with an arrow to proceed to the final set of questions.

(In this part, participants were randomly shown one of the eight videos)

Intentions to behave sustainably during vacations

1. I intend to reuse single-use plastic water bottles during my vacations.
2. I plan to purchase larger water bottles to minimize plastic waste during my vacations.
3. If I have the opportunity, I will use reusable (glass, metal, or plastic) bottles for my water during my vacations.
4. If I need to use plastic bottles during my vacation, I intend to recycle them in plastic bins.
5. I aim to use reusable bags (such as textile) or reuse purchased (plastic or paper) bags for shopping during my vacations.
6. I plan to properly dispose of trash after visiting places during my vacations.
7. I intend to avoid leaving any trash behind after a day at the beach.
8. I plan to minimize my overall plastic use during my vacations.
9. I intend to avoid purchasing products with excessive plastic packaging during my vacations.

Self-efficacy

1. I can easily practice pro-environmental behaviors, such as recycling and not leaving waste, during my vacations.
2. I can overcome obstacles that hinder pro-environmental behavior, such as finding recycling bins and using reusable bottles, during my vacation if I invest the necessary effort.
3. It is easy for me to stick to my pro-environmental aims during my vacations.

4. I feel confident in my ability to engage in pro-environmental behaviors during my vacations.
5. I believe I can make a positive environmental impact by adopting simple pro-environmental actions during my vacations.
6. I am certain that I can find and implement easy ways to reduce my environmental footprint during my vacations.
7. I am confident that I can maintain pro-environmental behaviors even in unfamiliar vacation settings.
8. I am capable of avoiding single-use plastics by planning ahead and bringing my own reusable items during my vacation.
9. I am confident that I can properly dispose of waste when I am at the beach.

Would you like to add anything on the topic of sustainble tourism (comments, personal opinion on the topic, etc.)?

Your response has been recorded. Thank you for the time you spent taking this survey.

Here is a link to the free e-book about Valencia for your effort:

Click here for the e-book in the drive

If you have any problems accessing or downloading the e-book, please email the researcher at this email address: p.wielgus@student.utwente.com

Extra information:

The aim of the master's thesis is to understand how emotional video content influences tourists' intentions to engage in sustainable behaviors during their vacations. The emotions focused on are

hope and fear. During the study, one of the eight different videos was shown in random order. Thank you again for participating; your answers were of great value to this study and are processed completely anonymously.

Appendix II: Experiment videos

Links to the experimental videos are provided below. For convenience, they are accessible via Google Drive.

Video 1: Control (Neutral)

English:

https://drive.google.com/file/d/1qgyn7F_81MK4Kqs7b6qlD8volTSCYXpQ/view?usp=share_link

Dutch:

https://drive.google.com/file/d/1Lm1rEpCZdEqcWYB0-H8FC-AyS0YdyD5h/view?usp=share_link

Video 2: Fear

English:

https://drive.google.com/file/d/19xBkct-zlY4_Mr3pbFdNG67TC-N0gKEw/view?usp=share_link

Dutch:

https://drive.google.com/file/d/1TSUWrdh9JqbuzuwsnISY20qjpHosFbvO/view?usp=share_link

Video 3: Hope

English:

https://drive.google.com/file/d/13b5c6f3nITBSfHyIBu3ZiLOzv6OlDkCe/view?usp=share_link

Dutch:

https://drive.google.com/file/d/1IY0h8KhtJzH95HIJapqkgJxOvDiJkRS8/view?usp=share_link

Video 4: Fear + Hope

English:

https://drive.google.com/file/d/1bnIkqw790feR6BuTx97rObetIVuBHRhu/view?usp=share_link

Dutch:

https://drive.google.com/file/d/13NDOWsWi19njG4Kd6ME_Rtv6RfpQCirh/view?usp=share_link

Video 5: Control + Self-Efficacy

English:

https://drive.google.com/file/d/1_I26I7daZvGzCuCv3SBPYADnLyxTnPYz/view?usp=share_link

Dutch:

https://drive.google.com/file/d/1_I26I7daZvGzCuCv3SBPYADnLyxTnPYz/view?usp=share_link

Video 6: Fear + Self-Efficacy

English:

https://drive.google.com/file/d/1dlBGgYq_GS9n57n9bWV92cy8l9u2NW1H/view?usp=share_link

Dutch:

https://drive.google.com/file/d/1cGkwitz2xVLwCGDe5vCDXdpYmbjhm58I/view?usp=share_link

Video 7: Hope + Self-Efficacy

English:

https://drive.google.com/file/d/1bnIkqw790feR6BuTx97rObetIVuBHRhu/view?usp=share_link

Dutch:

https://drive.google.com/file/d/1Lm1rEpCZdEqcWYB0-H8FC-AyS0YdyD5h/view?usp=share_link

Video 8: Fear + Hope + Self-Efficacy

English:

https://drive.google.com/file/d/15DttmZpeYNwXq3y3jlQli7bgzKWiU91U/view?usp=share_link

Dutch:

https://drive.google.com/file/d/1Lm1rEpCZdEqcWYB0-H8FC-AyS0YdyD5h/view?usp=share_link

Appendix III: Sample characteristics

Table 5:

Sample characteristics

	N	Min	Max	Mean	Std.Dev
Age (in years)	237	18	84	38.5	15.7

		N	Percentage
Gender	Male	59	74.3%
	Female	176	24.9%
	Other	1	0.04%
	Prefer not to say	1	0.04%
Education level	No schooling	1	0.04%
	Primary education	4	1.7%
	Lower secondary education	28	11.8%
	Upper secondary education	79	33.3%
	Bachelor's or equivalent stage of education	70	29.5%
	Master's or equivalent stage of education	45	19%
	Doctoral or equivalent level	10	4.2%
Duration vacation	It's my first day	35	14.8%
	2-4 days	98	41.4%
	4-7 days	60	25.3%
	More than a week	26	11%
	More than 2 weeks	18	7.6%
Travel destinations	Asia	74	31.2%
	United States	81	34.2%
	South America	31	13.1%
	Africa	51	21.5%
	Australia	16	6.75%
	Antarctica	0	0
	Only Europe	93	39.2%
Country of residence	Austria	1	0.4%
	Belgium	7	2.95%
	Canada	3	1.3%
	Croatia	1	0.4%
	Czech Republic	1	0.4%
	France	2	0.8%
	Germany	18	7.6%
	Hungary	1	0.4%
	Ireland	1	0.4%
	Italy	3	1.3%

	Jordan	1	0.4%
	Montenegro	1	0.4%
	Netherlands	118	49.8%
	Oman	1	0.4%
	Poland	52	21.9
	Portugal	2	0.84%
	Scotland	1	0.4%
	Serbia	1	0.4%
	Slovenia	1	0.4%
	Spain	10	4.2%
	Sri Lanka	1	0.4%
	Switzerland	1	0.4%
	Thailand	1	0.4%
	UK	4	1.7%
	USA	3	1.3%
Video	1. No emotions	35	14.8%
	2. Fear	31	13.1%
	3. Hope	27	11.4%
	4. Combination	27	11.4%
	5. No emotions + Easy Behaviour	23	9.7%
	6. Fear + Easy Behaviour	33	13.9%
	7. Hope + Easy Behaviour	32	13.5%
	8. Combination + Easy Behaviour	29	12.2%