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Article

# Fostering Sustainable Travel Behavior: Role of Sustainability Labels and Goal-Directed Behavior Regarding Touristic Services

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**Abstract:** Individuals around the globe engage in sustainable consumption in their everyday life, e.g., when it comes to individual transportation. Although tourism behavior contributes to global carbon emissions to a considerable extent, consumers' awareness of sustainability in the tourism industry is still underresearched. Placing eco-labels next to tourist offers on websites might direct consumer's perception towards more sustainable offers. By employing eye-tracking techniques and surveys, this research aimed at linking information about sustainable tourist offers, perception of eco-labels and subsequent perception and preferences of tourism services. In Study 1, eight existing hotel offers with sustainability certification (four different labels) were selected and their websites presented to 48 participants (four websites each), whose eye movements were tracked. After looking at each website, they rated the overall appearance of the website. Based on the results, in the second study, participants' (n = 642) awareness of labels, their values and attitudes regarding sustainable behavior were found to influence their preference for certified tour operators. In addition, individuals' ideas of their perfect holidays were captured to allow a better understanding of their motivation. This research proposes implementing appropriate sustainable labeling in the tourism industry to increase awareness about sustainability among travelers and subsequently increase sustainable travel behavior.

**Keywords:** eco-labels; awareness; perception; trustworthiness and credibility of labels; eye-tracking

## 1. Introduction

According to the World Tourism Organization and the United Nations Environment Programme [1], the tourism industry contributes to 4.6% of global warming and about 5 % of global carbon emissions. The major part of emissions is caused by tourism companies in the transport sector (75%) and the accommodation sector (20%). In addition to the importance of environmental goals in general, there is growing awareness of negative impacts of tourism and the need to behave sustainably. Booking trips and holidays is a typical consumer decision in tourism, yet there are no clear results on whether consumers are willing to change their behavior to help tourism become more sustainable [2–5]. In this respect, sustainable tourism can be described as “tourism that takes full account of its current and future economic, social and environmental impacts, addressing the

needs of visitors, the industry, the environment and host communities" ([1], np). At present, there are few regulations of environmental and sustainable practices in the tourism industry and often voluntary approaches guide the industry's pro-environmental, social and economically sustainable performance [6,7].

Consumers vary in their pro-environmental attitudes, which guide their decision-making [8] and determine their booking choice as sustainable or not. Research is scarce exploring whether individuals have associations to the environment or concerns for environmental and social problems when imagining their ideal holiday and subsequently when booking their holiday trip [2–5]. Therefore, understanding individuals' perception of touristic offers and services as part of their decision-making is vital to be able to motivate sustainable tourist behavior. Goals guide decision-making and choices [9,10], which will be examined in this research.

A goal-directed behavior consists of making a deliberate decision for a sustainable option [8]. It is assumed that this deliberate decision leads to a higher preference for a choice, intermediated by awareness and attention, which are significant prerequisites in decision making [11]. The deliberate decision comprises: (i) a pro-environmental attitude (environmental concern) as part of personal goal setting; (ii) the belief that choosing a sustainable tourist option for achieving this goal can make a difference; (iii) knowledge about eco-labels, i.e., that they exist, what they look like, and what they mean; and (iv) trustworthiness of labels and certifications, i.e., they are considered relevant and true.

This is where the current research sets in and aims to investigate the deliberate decision to choose a sustainable tourist option. In particular, we investigate the role of eco-labels at websites in two research questions: We examine prerequisites in decision-making, i.e., whether people are aware of eco-labels when they are presented along information about hotel accommodation on a website and whether the awareness affects the perception of the website (RQ1, impact of awareness on perception). Additionally, we investigate how the search for information is related to the perception of the website (RQ2, impact of search for information on perception).

To test the concept of goal-directed behavior, we analyze how pro-environmental attitudes (environmental concerns), subjective norm, belief to achieve a goal, trustworthiness of labels and certifications and knowledge about eco-labels relates to tourists' preference to choose a certified tour operator, who represents an important intermediary between supply and demand (RQ3, antecedents of preference for certified tour operator).

Finally, we explore whether those who find eco-labels trustworthy and who prefer certified tour operators hold a different image of a perfect holiday and whether environmental and sustainable elements are part of this image (RQ4, image of vacation).

The article is structured according to this conceptualization of goal-directed behavior and decision-making: First, we discuss awareness of eco-labels and perception of offers and develop two hypotheses dealing with the prerequisites for decision-making. Second, we describe the role of tourist operators as important intermediary in the tourism sector and the role of eco-labels and certification. Third, we discuss sustainable travel behavior and develop five hypotheses according to the model of goal-directed behavior. Eventually, we suggest exploring the image of a perfect holiday groups of people with varying trustworthiness in eco-labels and preference for certified tour operators.

### *1.1. Awareness of Eco-Labels and Perception of Offers*

Among the informative tools that raise awareness and promote environmentally friendly practices are certifications, eco-labels and respective awards [2,12]. To identify a product or service as sustainable, consumers depend on a responsible authority to check the status on their behalf and to mark the product accordingly. The most common way of compromising the sustainable status of a product or service is to closely examine the certificate or label. Sustainability labels inform tourists about sustainable holiday and travel choices. However, to do so, tourists have to be aware of the existence of these labels as well as their functions. Moreover, there is only a chance that customers will be willing to change their tourism behavior, if they trust the credibility of these cues [13,14].

Consumers' awareness of respective labels and the impact on travel behavior is a still under-researched topic. Especially when it comes to a change in the behavior of customers, there is so far no evidence that tourists would rather travel with a certified tour operator than one without certification [2–5]. Some studies suggest that customers are not aware of these labels and certifications (e.g., [4]) and other studies found that customers are aware but unwilling to change their behavior (e.g., [15]). Research has further shown that even if tourists consider environmental and sustainability issues, they still need to be aware of sustainability labels and find them to be trustworthy to let them impact their behavior [16].

Although eco-labels have been provided for many years, individuals do not pay particular attention to them when planning their holidays [5]. Some scholars highlight that sustainability certifications may not have the desired impact on potential tourists [2–5]. Due to a general lack of awareness about eco-labels among tourists, many labels were found to be not suitable for reaching potential customers or for influencing their behavior [7]. Although there is growing tourist interest in sustainable holiday experiences [17], many tourists are unaware of the existence of certifications for environmentally responsible holiday offers and therefore do not relate to them when booking their holidays [4]. Even when tourists are considering sustainability issues when booking their holidays, the sustainability of a product still remains only one of many characteristics consumers consider when comparing different offers of tourism products [13]. Consumers, who have a good understanding of what sustainable tourism stands for, tend to interpret eco-labels along those lines compared to tourists with little knowledge about sustainable tourism. This was confirmed in a study on seafood labels [16].

Communication strategies motivate customers to behave sustainably by raising awareness as well as by informing and educating them about activities, offers and consequences of their choices [2]. Environmental awareness has been found to lead to pro-environmental acts [18]. Conceptualized as multidimensional construct, environmental awareness comprises knowledge, values and attitudes towards the environment (e.g., [19]). Knowledge has been argued to be significant for predicting environmental action but it does not always make people act accordingly. Promotion of environmental consciousness, for instance by using eco-labels, seems critical [20]. Activities that build on awareness building fail to establish the link between attitudes, motivation or intention and action [21–24]. Certain tourist segments, for instance eco-tourists [17], seem to be concerned about the environment and know about the (negative) impact of their vacation on the environment, but the majority of tourists do not know about the negative effects and does not choose more sustainable offers over conventional holidays [25].

Eco-labels have the potential to close the psychological gap between the environmental challenges and the actions of individuals by providing valuable information. Consequently, they adapt their behavior towards a more sustainable one, while on vacation [26]. Eco-labels influence consumers' behavior, but they do so in a biased way [27]. It is assumed that eco-labels can empower consumers as they "resolve the information asymmetry between the seller and buyer of a good by providing information to the buyer on how the product was produced" ([16], p. 8197). On the one hand, a high number of eco-labels are suggested to make consumers aware of the issue at their point of choice, as with several eco-labels a high amount of information is presented [8,25]. On the other hand, too much information might confuse consumers [16], make it difficult for consumers to recognize labels and to trust them due to limited transparency of the auditing/certification process and unclear benefit (e.g., [22,28]). The number and variety of awards and certifications are huge and confusing to individuals [5,29], who are simply overwhelmed by an overload of information transmitted by eco-labels [15]. In addition, how an eco-label is presented might influence the perception of the offer. For instance, tourist offers are presented at websites. In this respect, web usability studies show that easy to use and clear websites increase satisfaction with the provider [30–33].

We build on the eye–mind hypothesis [34], suggesting that what individuals are looking at is a reflection of what they are attending to and thus is a measure of awareness. In addition, what individuals are looking at, and how often, can be used as proxy for search activity.

Given the importance of awareness of labels, certifications and awards as antecedent to perception, we develop the following hypotheses:

**Hypothesis 1 (H1).** *Awareness of eco-labels on a website is related to the perception of the website.*

**Hypothesis 2 (H2).** *Searching for information regarding eco-labels on a website is related to the perception of the website.*

### 1.2. Individuals' Preference for Certified Tour Operators

Tour operators are important intermediaries in the tourist sector. About half of the most popular destination choice “beach holidays” was sold through travel retailers including tour operators [35]. Tour operators (including tour guides) were also identified as primarily responsible for providing tourists with information on ethical aspects of tourism [36].

Tour operators have increasingly been using labels to indicate environmental and sustainable offers to improve the image of the organization and to attract further customers [29,37]. Being located in the center of the tourism supply chain, tour operators have the power to influence the behavior of tourism delivery and consumption and are assumed responsible for increasing sustainability in the tourism industry [38]. Tour operators act in a very fragmented industry, consisting of tourist accommodation, transportation (to and from destinations), food services, excursion and activities for tourists [39]. They bundle these products and services and need to make sure that suppliers live up to the criteria of the sustainability award they wish to receive. In this respect, demand from customers has a very strong influence on tour operators [40] and tour operators will only be willing to take efforts to receive certifications, if customers demand sustainable tourism products [14].

Tour operators serve as important information source for tourist choices [41]. In particular, when uncertainty is high, it is considered a professional source that serves high informational needs, for instance if a trip is complex and the quality of the trip should be high. This is the case in both the phase before and after a definite trip decision was made.

Research has studied interrelationships of information, image creation and travel behavior with regard to tourist destination choice. We extend this research by focusing on one specific aspect of tourism, i.e., sustainability communication in the form of a label or certification.

### 1.3. Sustainable Travel and Goal-Directed Behavior

As outlined above, a goal-directed behavior consists of making a deliberate decision for a sustainable option [8], which is now further developed to the question of how to increase the effectiveness of sustainability communication [22,42].

#### 1.3.1. Pro-Environmental Attitude (Environmental Concern) as Part of Personal Goal Setting

Identification with environmentally conscious consumers and a green personality—a person’s “environmentalist” self-perception or identity [43]—are assumed to lead to more sustainable behavior because people who are concerned with the environment feel more attached to a specific behavior, such as organic food consumption [44,45]. While the environmental attitudes of tourists might be strengthened by the information provided by eco-labels, they seem to be not strong enough to overcome behavior. Often, not behaving environmentally friendly is habit-related, convenience or reflects a personal preference [2]. Highly environmentally concerned consumers, who in their daily life are active in environmental protection, do not show the same behavior when on holidays, though. They often engage in vacation behavior with negative environmental consequences and come up with a range of explanations justifying their tourist activities [23]. In addition, despite positive attitudes towards environmentally and socially responsible holidays, individuals are unwilling to pay for more sustainability performance [46,47].

Consequently, we propose:

**Hypothesis 3a (H3a).** *Environmental concern positively relates to the preference for traveling with a certified tour operator.*

Subjective norms reflect the “perceived social pressure for a person to engage or not to engage in a behaviour” ([48], p. 7). They influence attitudes towards organic purchases, which means that individuals are influenced by the opinions of others towards organic purchases [49]. It is further suggested that subjective norms influence purchase intentions even if people have negative attitudes towards buying sustainably produced food [50]. Similarly, sustainable purchase behavior and subjective norms are positively correlated if the perceived subjective norms correspond with one’s personal norms [51]. A recent study on eco-friendly travel choices investigated social comparison feedback and found mixed results on intentions to choose eco-friendly travel options [52]. It is also argued that a change from purchasing conventional to sustainable food products is rather costly, which cannot be compensated by external influence.

Hence, we propose:

**Hypothesis 3b (H3b).** *Subjective norm to behave sustainably positively relates to the preference for traveling with a certified tour operator.*

### 1.3.2. Belief to Achieve a Goal

General environmental values can be seen as voluntary commitment, chosen by individuals consciously or unconsciously, and as universal and fundamental values that underlie sustainable development [53]. Reflecting beliefs in certain desirable end states, values serve as antecedents to attitudes and actions [54,55] and general environmental values lead to environmentally sustainable behavior [56]. The values base on the Millennium Declaration of the UN and are freedom, equality, solidarity, tolerance, respect for nature, and shared responsibility [53]. Thus, it is suggested:

**Hypothesis 3c (H3c).** *General sustainability values positively relates to the preference for traveling with a certified tour operator.*

### 1.3.3. Trustworthiness of Labels and Certifications

A barrier for consumers not to choose sustainable offers is greenwashing, i.e., referring to “exaggerated benefits or unsupported claims in support of the environment in advertising and other persuasive communications” [57]. They simply mistrust these offers [58] and refrain from purchasing. In addition, individuals do not believe in environmental performance of businesses, limiting the trustworthiness of their offers [3]. Little trustworthiness of eco-labels may be grounded in the belief that during the certification process only a limited selection of criteria is assessed. Individuals are also unable to distinguish between businesses which have failed to meet the certification criteria and those which did not try to receive certifications [3].

**Hypothesis 3d (H3d).** *Trustworthiness of certifications positively relates to the preference for traveling with a certified tour operator.*

### 1.3.4. Familiarity with Eco-Labels

Familiarity, defined as the ability to recall an eco-label from the past, helps in developing a knowledge structure. It refers to both information stored in memory and perceived knowledge about a product or service [59]. Recognizing eco-labels plays an important role in explaining purchasing behavior, for instance, of eco-labeled seafood [60]. Based on this, the following hypothesis is developed:

**Hypothesis 3e (H3e).** *Familiarity with labels positively relates to the preference for traveling with a certified tour operator.*



#### 1.4. Image of Vacation by Consumer Segments

Thus far, predictors of individuals' preference for certified tour operators were described and respective hypotheses developed. However, motivations and intentions of individuals to go on vacation and choose among the variety of offers stem from their image of what a perfect holiday means to them. Thus far, holidays are not associated a lot with sustainability or eco-friendliness, as mentioned above. Even if asked directly, tourists do not rate these criteria highly [61]. In a study on sustainable lifestyles, tourism-based environmental practices were investigated and consumer segments described [34]. Environmental consciousness at home does not translate easily to the context of holidays. Even "committed environmentalists" who show high attachment to nature as part of their holiday experience, would rather buy into compensation schemes than refrain from using air-travel [34]. Young tourists, who value sustainable holiday experiences look for quality in the choice of tour operators and expect support for environmental protection in the local area from them [17]. We assume that those, who find certified tour operators trustworthy and prefer them, might hold a different image of a perfect holiday. Thus, we are interested in exploring the image of their perfect holiday when individuals start their decision whether environmental and sustainable elements are part of this image (RQ4: Image of vacation).

## 2. Methods and Results

In the following, we investigate the four research questions empirically and present two different studies. While Study 1 comprises a lab experiment using eye-tracking techniques to investigate whether awareness and information search of eco-labels on a website relate to the perception of the website, Study 2 examines related factors of the preference for traveling with a certified tour operator and whether environmental and sustainable elements are part of the image of a perfect holiday using an online questionnaire.

### 2.1. Study 1

#### 2.1.1. Participants

In total, 48 participants (students at a business school in a major city in Austria) were recruited via an e-mail list from a subject pool (approximately  $N = 600$  bachelor students in the middle of their studies are automatically pool-members) at the Department of Marketing. The mean age was 23.46 years ( $SD 4.93$ ; range: 19–51 years) and 47.9% were female. Participants were rewarded in the form of course credit for a major marketing course. Their participation is voluntary. Testing took place at a university lab. Each of them viewed four out of eight accommodation offers from hotel websites on a computer screen with eye-tracking glasses on.

#### 2.1.2. Method and Procedure

An experimental study in the lab using eye-tracking technique (SMI Experiment Center™ 3.4, SMI BeGaze™, SensoMotoric Instruments (SMI), Teltow, Germany) was conducted to test whether people are aware of eco-labels when they are presented along other information about hotel accommodation on a website, and how the awareness influences the perception of the website. The procedure involved tracking of eye movements of participants and answering questions. Before starting the data collection, it was necessary to calibrate the equipment for each participant, which took a few minutes.

The websites presented eight hotels with eco-labels on their websites. They were shown to participants as static documents (.pdf) to avoid disturbance through browsing. The material was selected by one psychologist and a research assistant based on desk research and inspection of real offers from hotel websites, which carry the eco-labels as part of their offers. They are also presented at websites on labels and certificates [62,63]. The selection criteria were that labels should represent a cross-section of general and specific logos. In this context "general" implies logos that

promote sustainability in different sectors (including tourism), whereas “specific” means logos that only promote sustainability in the tourism and travel industry. Four different labels were eventually chosen based on this comprehensive research. These were two labels focusing on tourism in particular (Travelife, CSR tourism) and two labels focusing on sustainability in general (EMAS, Österreichisches Umweltzeichen). In addition, one label is international (Travelife), two European (EMAS, CSR tourism) and one national (Österreichisches Umweltzeichen) (see Table 1). Hotel and accommodation offers were selected based on the category of the hotel (hotel belonging to hotel chains versus family-run hotel) and what label it carries. In addition, the display of the label on the website was given consideration, ranging from lots of text and small logo on the website (stimulus code: STH, KUR, BSH) to big logo and lots of text (stimulus code: BWP, IIH) and medium size of label and lots of pictures (stimulus code: BH, BSPH, AS). Text-based websites had only small labels displayed while image-based websites display labels much bigger. The combination of labels (four labels) and hotel websites (two per label) resulted in a total of eight websites, which were randomly assigned to participants during data collection. Each participant rated four out of the eight websites.

**Table 1.** Background information about and selection criteria for eco-labels (Study 1).

Selection Criterion	Label	Awarded by	Hotel Type: Stimulus (No of Subjects)
Specific area: Tourism (CSR)	CSR Tourism	non-profit organization TourCert (Stuttgart, Germany)	Hotel chain: BWP (N = 26) Hotel chain: IIH (N = 19)
Specific area: Tourism (Sustainability)	Travelife	Travelife Ltd. (London, UK)	Hotel chain: KUR (N = 26) Family-run: AS (N = 24)
General area	EMAS	European Eco-Management and Audit Scheme (EMAS) logo is the eco-label of the European Union	Hotel chain: BSPH (N = 25) Family-run: BSH (N = 20)
General area	Österreichisches Umweltzeichen	Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (initiative by the Austrian government)	Hotel chain: BH (N = 26) Family-run: STH (N = 20)

The participants were asked to look at the website offer for as long as they felt was necessary to understand it. During this time frame, their eye movements were tracked and recorded. After showing the website, participants rated the overall appearance of the website (“How did you perceive the design of the website?”) on two items on their perception: clarity (1 = clear, 5 = unclear) and appeal (1 = appealing, 5 = unappealing). Additional items not relevant for the current study regarding the evaluation of the offer of the hotel on several aspects (destination, offer, environment, activities, images, appealing description), ranging from 1 = very attractive to 5 = very unattractive were asked. To test our hypotheses, we will only use the overall perception of the website as clear and appealing (Cronbach’s  $\alpha = 0.96$ ).

Two types of eye movements are usually modeled to gain insight into the overt localization of visual attention: fixations and saccades (glances). While fixations are eye movements that stabilize the retina over an object (with a minimum time of eye stability of 50 ms in our study), saccades are used in repositioning the fovea to a new location in the visual environment, such as a website [64]. Fixations correspond to the desire to maintain one’s gaze on an object and therefore are a physiological measure of awareness. Saccades (glances), which are voluntary, are considered manifestations of the desire to change the focus of attention. Eye movement analysis considers a third movement, i.e., smooth pursuits, which occur when tracking moving objects. For our study, we will focus on fixations and saccades as physiological measures of attention. What individuals are looking at is a reflection of what they are attending to and thus measures awareness [63]. In more detail, we produce the following eye tracking data [65]: fixation count (i.e., number of fixations on stimulus) and average fixation duration (i.e., how long on average respondents fixated the stimulus). The more fixations and the longer the duration, the more interesting, important or noticeable is the stimulus. In addition, first fixation, which



measures how much time respondents spent on the stimulus (first fixation duration; the longer, the more difficult to understanding or more engaging) is used.

As a measure of what individuals are looking at, we use glances count, i.e., the number of gazes on the stimulus. The higher the number of glances, the more searching takes place [65].

Finally, we split the entire website into several Areas of Interests (AOI), i.e., sub-regions of the page, to be able to extract data about fixations and glances exactly for the shown labels.

Thus, the study was designed as follows: Eight websites contains different labels in different sizes with different kinds of hotels whereby each participant randomly received four of these websites for evaluation. The independent variables are the measured eye movements (IV: Eye movements) which were registered with the different websites and the dependent variable is the reported perception of the website as clear and appealing (DV: Perception, mean of items clarity and appeal).

### 2.1.3. Results

The Austrian Eco-label (“Österreichisches Umweltzeichen”) was by far the most familiar of the four labels. Overall, 33 participants were familiar with the label, while the label “Travelife” was the least familiar label, with only six participants being familiar with the label. The survey showed that 14 respondents were familiar with the label issued by the European Eco-Management and Audit Scheme (“EMAS”); 11 participants were familiar with the label “CSR tourism”. Table 2 shows some descriptive information about the stimuli.

**Table 2.** Descriptive information about stimulus websites (aggregate data, Study 1).

Stimulus	Label	Sequence of Fixation	AOI Coverage [%] *	First Fixation Duration [ms]	Glances Count	Fixation Count	Average Fixation [ms]
BWP <sup>1</sup>	CSR Tourism	7	1.30	256.42	0.92	2.12	229.49
IIH <sup>1</sup>	CSR Tourism	8	1.10	197.50	0.87	1.30	178.04
BSH <sup>2</sup>	EMAS	8	0.20	59.00	0.25	0.25	52.33
BSPH <sup>1</sup>	EMAS	7	0.80	169.50	1.36	1.56	195.10
AS <sup>2</sup>	Travelife	7	0.70	250.40	1.50	1.92	266.10
KUR <sup>1</sup>	Travelife	9	0.20	86.87	0.48	0.56	82.15
BH <sup>1</sup>	Österreichisches Umweltzeichen	6	3.40	164.79	2.31	7.62	185.35
STH <sup>2</sup>	Österreichisches Umweltzeichen	7	0.20	n/a	0.10	0.10	16.20

Notes: \* AOI = Area of Interest; coverage (%) relates the selected AOI to all other AOIs (website): The higher the number, the bigger the label on the website. n/a: Due to a low number of fixations (only two), the duration was not captured. <sup>1</sup> = hotel chain; <sup>2</sup> = family-run hotel.

To test whether eye movements are related to perception (H1 and H2), a repeated measure regression is conducted using STATA, controlling for age, gender and education. The analysis ( $F(8, 46) = 2.47, p = 0.026, R^2 = 0.08$ ) reveals a significant effect for fixation count,  $\beta = -0.18, t(183) = -2.24, p = 0.030$  and first fixation durations,  $\beta = -0.30, t(183) = -2.06, p = 0.045$ , but no significant effect of glances count ( $p = 0.164$ ) or average fixations ( $p = 0.146$ ). The effect of first fixation durations and fixation count is based on the size of the label. Two  $t$ -tests comparing first fixation durations and fixation count for high and low coverage of the label reveal that first fixation durations is longer for large labels ( $M_{\text{low}} = 119.88, SD = 177.93; M_{\text{high}} = 206.51, SD = 258.27; t(183) = -2.70, p = 0.008$ ) and that fixation count is more often with larger labels ( $M_{\text{low}} = 0.92, SD = 1.42; M_{\text{high}} = 3.94, SD = 5.79; t(183) = -5.33, p < 0.001$ ).

Overall, the awareness of eco-labels on a website influences the perception of the website; however, when the size of the label is taken into account, first fixation durations and fixation count durations and fixation depend on it, supporting partly H1. The search for information regarding eco-labels does not seem to influence the perception, rejecting H2.

While Study 1 showed that awareness of eco-labels in general has a positive effect on the perception of websites, it is not clear what consumers consider when deciding for a sustainable tour operator and whether they consider sustainability for their perfect holiday. Therefore, we conducted Study 2.

## 2.2. Study 2

### 2.2.1. Participants

A convenience sample of 642 participants (62.1% female,  $M_{\text{age}} = 26.90$ ,  $SD = 4.93$ , mainly students) completed an online questionnaire. Participants stated that they mainly use tour operators for gathering information online (mean = 3.58,  $SD = 1.14$ ; 1 = seldom, 5 = always) or directly booking online (mean = 3.28,  $SD = 1.46$ ; 1 = seldom, 5 = always). On average, they state to travel 3.76 times per year; in more detail, they book city trips (mean = 3.21,  $SD = 3.83$ ; 1 = seldom, 5 = always) and beach holidays (mean = 2.61,  $SD = 1.37$ ; 1 = seldom, 5 = always). They travel with friends (mean = 3.08,  $SD = 1.43$ ; 1 = seldom, 5 = always) or with their partner (mean = 3.07,  $SD = 1.74$ ; 1 = seldom, 5 = always).

### 2.2.2. Method and Procedure

An online questionnaire was developed consisting of two parts to answer what are predictors of individuals' preferences for traveling with a certified tour operator and what image of the perfect holiday groups of individuals hold and what environmental and sustainable elements part of this image are. The first part of the questionnaire started with an open question to capture individuals' image of vacation ("a perfect holiday means to me ..."). Participants had to note a minimum of three associations, but could not report more than five. All reported associations were used in the analysis.

In the second part of the survey, participants were asked 12 questions on their general sustainability values, which they had to answer by rating their agreement or disagreement on a 5-point Likert scale. In order to guarantee reliability and validity a shortened version [66] of the Sustainability Values scale [53] has been applied. These questions were used to find out if participants show general concern for sustainability issues (Cronbach's  $\alpha = 0.73$ ). In order to find out about their level of familiarity with labels, participants were shown the most common sustainability certifications for tourism providers in Austria (nine labels) and were asked about their level of familiarity and their experience with these certifications (Cronbach's  $\alpha = 0.98$ ). This list included the labels used in Study 1 (EMAS, CSR tourism, Travelife, Österreichisches Umweltzeichen). Next, evaluations of participants on the trustworthiness of sustainability certifications for tour operators were measured [67]. Participants were asked to state the extent to which they agree or disagree with eight statements regarding trustworthiness of certifications on a 5-point Likert scale (Cronbach's  $\alpha = 0.80$ ). The preference to choose a certified tour operator was measured using a single-item ("I would travel with a tour operator if he'd been awarded a sustainability certificate") on a 5-point Likert scale (mean = 3.02,  $SD = 1.11$ ; 1 = disagree, 5 = agree).

Finally, questions on general environmental concern (Cronbach's  $\alpha = 0.74$ , eight items) and subjective norm (Cronbach's  $\alpha = 0.83$ , five items) of the participants as well as demographic questions regarding age, gender, education, living situation, nationality and income of the participants followed. The questionnaire included further questions (booking and traveling behavior, eight items; importance ranking of eight factors in the booking decision [68]).

### 2.2.3. Results

To test the concept of goal-directed behavior and whether pro-environmental attitude (environmental concern (H3a) and subjective norm (H3b)), belief to achieve a goal (general sustainability values (H3c)), trust of labels and certifications (trustworthiness of certifications (H3d)), and knowledge about eco-labels (familiarity with eco-labels (H3e)) are related to individuals'

preferences for traveling with a certified tour operator, a step-wise regression (method: enter) was run using SPSS (Correlation matrix see Table 3).

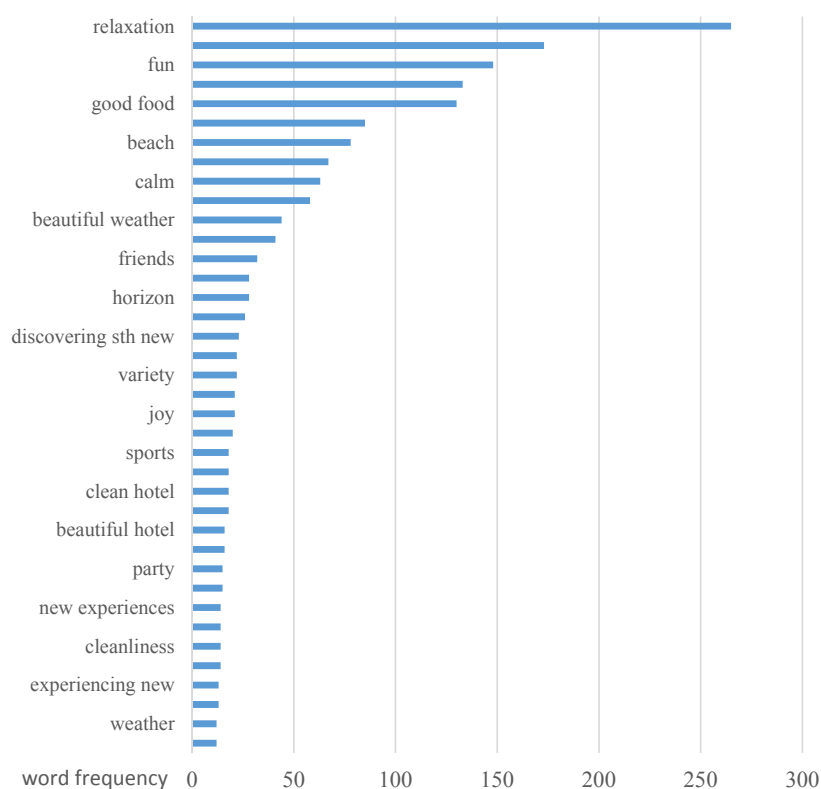
**Table 3.** Correlation matrix (Study 2).

	(1)	(2)	(3)	(4)	(5)
(1) Sustainability Values					
(2) Environmental Concern	−0.315 **				
(3) Subjective Norm	−0.257 **	0.487 **			
(4) Familiarity with Labels	−0.088 *	−0.034	−0.021		
(5) Trustworthiness of Labels	−0.163 **	0.371 **	0.454 **	0.014	
(6) Preference Certified Tour Operator	−0.260 **	0.355 **	0.454 **	0.012	0.671 **

Note: \*  $p < 0.05$ ; \*\*  $p < 0.001$ .

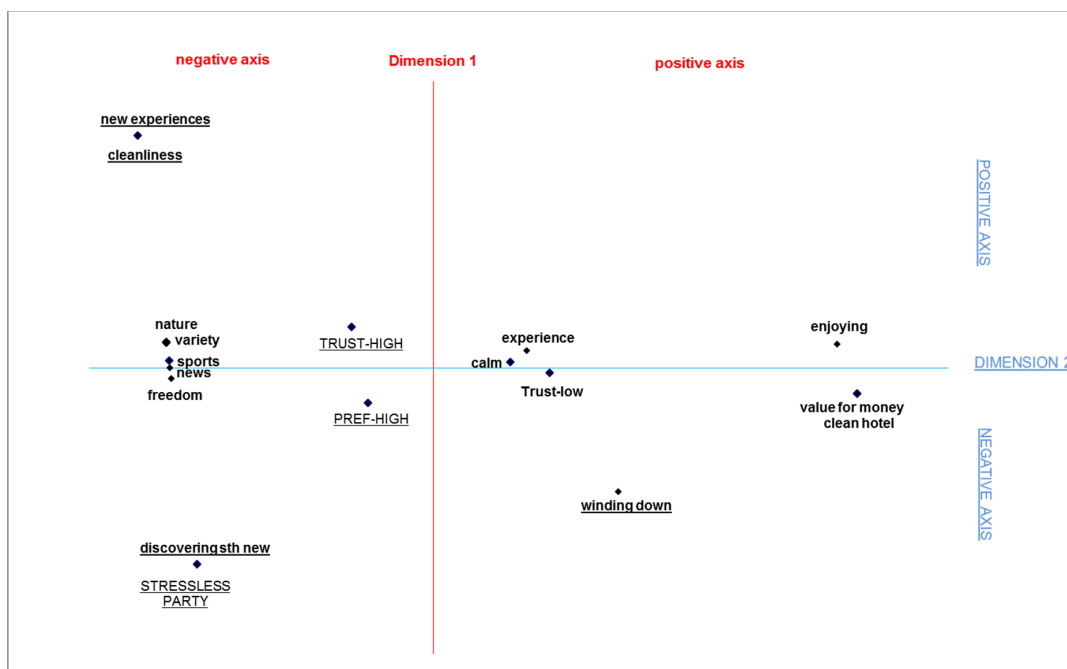
Step 1 (model 1) included subjective norm, general sustainability values and environmental concern  $F(3,638) = 67.78, p < 0.001, R^2 = 0.24$ , the second step (model 2) added familiarity with labels and trustworthiness of labels ( $F(5,636) = 122.13, p < 0.001, R^2 = 49$ ). The analysis reveals a significant relation with general sustainability values ( $\beta = 0.12, t(641) = 3.88, p < 0.001$ ), subjective norm ( $\beta = 0.15, t(641) = 4.25, p < 0.001$ ) and trustworthiness of certifications ( $\beta = 0.57, t(641) = 17.58, p < 0.001$ ).

The relevance of sustainability in the booking decision will be explored by considering the freely associated open answers to the image of the perfect holiday. To answer what image of the perfect holiday individuals hold and whether environmental and sustainable elements are part of this image, a correspondence analysis was conducted on the frequency of associations towards the “perfect holiday” (see Figure 1). The correspondence analysis (Anacor, normalization “canonical”) is an exploratory method for the graphical display of categorical data, which allows the simultaneous treatment of variables. The closer one association is to a group or another association the more often they are stated together with this group or association [69].



**Figure 1.** Frequencies of free associations (Study 2); associations  $f > 10$  are displayed.

The analysis starts with a table of frequencies, where in the current analysis the rows represent the different free associations to a perfect holiday and the four columns represent the groups high and low trustworthiness of labels (trust-high and trust-low) and high and low preferences for certified tour operators (pref-high and pref-low). For these two grouping variables, we split the sample (median) into two groups (high/low) per variable, resulting in four groups. Two dimensions were extracted, which contribute 82.4% of variance to the overall solution. The overall spatial variation (total inertia) was 0.13, indicating that the correlation between row points (associations categories) and column points (groups of individuals) is fairly low. For interpretation purposes, the row and column points, which contributed significantly to the two dimensions, were taken into consideration [70]. In the following, the two dimensions are described (see Figure 2).



**Figure 2.** Correspondence analysis (Study 2). Note: Associations and groups contributing to **dimension 1** are presented in bold letters; those contributing to DIMENSION 2 in uppercase; and associations and groups contributing to **both dimensions** appear bold and underlined.

Only associations mentioned more than ten times by respondents are included in the analysis. Associations and variables that significantly explain the dimensions are displayed.

Dimension 1 distinguishes between “value-added chill out” (positive axis: expressed by the associations calm, experience, enjoying, value for money, clean hotel and winding down) and “excitement and discovery” (negative axis: expressed by the associations nature, sports, freedom, news, variety, new experiences, cleanliness, and learn something new). The positive axis also includes people with low trustworthiness towards certifications. Nature is the only association that refers to the environment; it can be found in the “excitement and discovery” part of dimension 1 and does not seem to be close to any group.

Dimension 2 separates the themes “finding purity” (positive axis: expressed by associations new experiences and cleanliness) and “carefree” (negative axis: expressed by the associations party, stressless, winding down, and learn something new). The dimension further distinguishes between people who believe in the trustworthiness of certifications (positive axis) and who have high preferences for traveling with certified tour operators (negative axis). It seems that people interested in enjoyment and value for money are rather skeptical about certifications. Those who find certifications trustworthy

put more emphasis on variety in their holiday. Eventually, people who imagine their perfect holiday to be “carefree” show preference for traveling with certified tour operators.

### 3. Discussion

This research set out to understand individuals’ perception of touristic offers and services in order to motivate them to choose sustainable alternatives when going on vacations. Eco-labels provide valuable information to consumers—they empower them—if seen and processed; thus, they need to be made visible, accessible and salient. However, the interpretation of information differs, depending on individuals’ understanding of the cue (e.g., [11]). In particular, we investigated whether and how cues can raise awareness, how preferences for traveling with certified tour operators are shaped and whether those, who trust and prefer certified tour operators hold a different image of a perfect holiday.

Using eye-tracking and an online questionnaire, the current research shows that the awareness of eco-labels influences the perception of the website using the label (Study 1) and influences sustainable travel behavior, together with values and attitudes regarding sustainable behavior (Study 2). The current research proposes implementing appropriate sustainable labeling in the tourism industry to increase positive perception of websites including such labels among travelers and subsequently increase sustainable travel behavior. It might help in identifying opportunities for tour operators to improve the offers of sustainable tours and initiate more sustainability.

In particular, regarding the question concerning the relation between the awareness of and search for eco-labels and the perception of a website of hotels (RQ1 and RQ2), this means that when individuals browse an offer, their searching for relevant information does not influence their perception, but once some evidence for certification (in our case sustainability certification) is processed, the overall perception is positive. It does not matter in what sequential order the information is perceived (eco-labels are looked rather late) and it seems that bigger displays are better recognized. As regards the question of possible influences on tourists’ preference to choose a certified tour operator (RQ3), the current study shows that trustworthiness of certifications influence the decision to choose operators with certifications. In addition, the social environment and sustainability values have an impact. Environmental concern, mentioned in past research with an unclear role, was not influential in our research. While we found support that awareness of labels impact the perception of a website in a positive way, we could not find an influence of individuals’ familiarity with labels on their actual preference for choosing certified tour operators. To conclude, people prefer to travel with certified tour operators the more they think that certifications for tour operators are trustworthy, the more they feel dependent on how others think one should travel and the more they agree with general sustainability values.

However, the awareness and the familiarity with eco-labels in the tourist sector is generally low. Consumers’ unawareness of eco-labels may partially result from their confusion due to the current proliferation of labels and certifications. Their confusion may further lead consumers to ignore green messages [71]. On the other hand, consumers may be unaware of eco-labels in the tourist sector, as the majority of consumers do not think about sustainable issue when planning their holiday [2–5].

To explore further whether those, who trust and prefer certified tour operators, hold a different image of a perfect holiday and whether environmental and sustainable elements are part of the image (RQ4, image of vacation), our research explored the general meaning and understanding of the concept “holiday” for individuals. Generally, the concept of traveling and holiday is (still) not linked to sustainability. A perfect holiday is rather associated with relaxation, recreation and fun. In addition, price for value and quality/comfort are relevant decision criteria while impact on environment and social responsibility are the least important criteria when booking. This is in line with research showing that a holiday is perceived as “different” to everyday life [34]. Many consumers do not consider environmental issues when planning their holidays [72]. Unlike other behaviors, such as switching off lights or purchasing organic foods, it seems that sustainable travel behavior cannot be

easily embedded into daily life practices [34]. This indicates that the promotion of sustainable behavior is still a challenge in the context of tourism.

In the current study, we identified associations group under the term “nature” as closest to the concept of environment, next to a “carefree” holiday and could link it to individuals who would travel with certified tour operators. Another group with high sustainable values views holidays as offering amenities and have a compound view of holidays. Those people who associate their perfect holiday with “value for money” would rather not prefer certified tour operators and do not find certifications trustworthy.

There are certainly economic implications of tourist preferences; sustainable consumption is seen as a business opportunity. However, tourists need to be convinced and willing to make efforts to improve their behavior [47]. Our research points to the role of businesses to raise awareness of eco-labels [16]. It seems that consumers’ demand for sustainable options and voluntary certification of some tour operators, etc. are not strong enough to generate respective and many offers. Governmental and non-governmental pressure and encouragement could force businesses to adapt certification schemes. This is important also because government programs are more efficient than private ones [73].

As regards practical implications, communication strategies should be applied to increase the awareness and credibility of eco-labels [13,27] in the tourism industry. Low credibility of eco-labels can be encountered using recognized and official certifications and making the awarding and auditing process clear and transparent [12,22,57]. It seems that few labels that communicate clearly their purpose (e.g., CSR) are to be preferred over a variety of less clear labels or schemes (EMAS) to avoid consumer confusion. Simple seal-of-approval logos and labels have been found to affect consumer behavior more than complex information-disclosure labels [73]. The design of logos might be vital as well, following our study results, they should be big and well-known (Study 1 and Study 2). However, big logos are looked at promptly (first fixation durations). Thus, the logo size on a website should be carefully chosen depending on the purpose of communication.

In general, labels need to be salient and accessible for consumers to allow individuals processing and understanding the information that it expresses [22]. This means that labels need to be made visible by e.g., placing them next to an accommodation offer on a website. For instance, analyzing Internet advertising in the tourism industry, it was found that increased exposure to information increases attention and appropriate content that fits individuals’ preferences increases involvement with the offer. Both increase the effectiveness of the information. Moreover, using imagery that stands out from other visual information is easier to process, and should be used in combination with text [74,75].

Besides its merits the two studies hold also some limitations. Study 1 presents an experiment where different websites are randomly allocated to different participants. The websites vary over several aspects: chain versus family hotel, kind of label, and size of label. In a standard experiment, these variations would have been too many, but in the current case not the websites with the labels are the independent variables but the registered eye movements that they trigger. In the current study these variations assure that a great variety of different websites with labels stimulate several different eye movements that are related to the perceptions of the websites. One problem, which is usually the case with eye-tracking methodology in social research, is the small sample size [76]. Due to the small sample size, additional control variables could not be included in the analysis. Further research should particularly pay attention to the role of familiarity as confounding variable, as familiarity with logos is an important determinant of attention to labels [77]. In their review, Wedel and Pieters [78] discuss familiarity as a top-down influencing factor of eye-movement patterns. In the current study, familiar eco-labels may have attracted less attention than new, unfamiliar labels. Consumers who are familiar with a label may look at it for a short time, because they have previously viewed the label extensively and think that a further examination is unnecessary (cf. research on nutrition label use; [79]).

Study 2 helps us in identifying relations in goal-directed behavior but further research needs to identify causal instead of relational relationships using appropriate methodology and instead of using



a single-item for preferences use a multiple item scale to increase validity. Answering RQ4, Study 2 presents a correspondence analysis, where free associations are categorized according to two different variables (trustworthiness of certifications, preference for traveling with a certified tour operator). For grouping these two variables, a median split was undertaken resulting in four different groups of low and high characteristics. These median splits result in artificial groups, which not exactly reflect the original values of the variables. Nevertheless, for the current analysis, a reduction of complexity is needed. As the correspondence analysis shows, even with this reduction of complexity, we find differences between different groups.

Future research therefore could build on our findings that awareness of eco-labels impact perception positively. To delve deeper into the dynamics of designing eco-labels and online travel websites, systemic eye-tracking studies that test the size, position and meaning of eco-labels for a specific tourist offer could be conducted. In addition, the impact of communication efforts by different senders (e.g., governmental, non-governmental, and private organization) would show which authority is most effective in promoting eco-labels. Eventually, to make the perfect holiday a sustainable holiday, a behavioral spillover [55] from sustainable behaviors of individuals' everyday practices, for instance using public transportation instead of a car, to sustainable travel behavior could be investigated. Research so far looked at different contexts (household and hospitality/hotel) and found that the vacation context is hedonic and therefore spillover is less likely [80,81].

Summing up the current research shows that cues such as eco-labels are essential for eco-tourist to decide for sustainable tourism options. Especially trustworthiness of the labels is of importance when selecting a sustainable tour operator. However, tourism industry needs to raise awareness of the importance of sustainable tourism offers, as a perfect holiday is not linked to sustainability yet.

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