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# Sustainable Tourism and Facilities Preferences: The Sustainable Tourist Stay Scale (STSS) Validation

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**Abstract:** This study aims to start the development of the Sustainable Tourist Stay Scale (STSS), a self-report instrument designed to measure tourists' preferences regarding the degree to which they accept accommodation and programs in tourism facilities with sustainable characteristics. The research involved a total sample of 621 participants aged 18 to 74 (m = 41.75%; f = 58.25%). According to the literature and the available data, we considered the possibility that young people (millennials) and adults within the same sample may show peculiarities concerning the sustainability issues. We carried out three subsequent analyses: (1) an explorative factor analysis; (2) a confirmatory factor analysis via structural equation modelling; (3) the test of the structural invariance between young people and adults. The results supported a three-factor scale solution and they are discussed with reference to their potential practical applications to better understanding the preference for a sustainable stay.

**Keywords:** sustainable tourism; hospitality; tourist's preferences; millennials; adults; validation; factor analysis; structural equation model; COVID-19

## 1. Introduction

The tourism industry has experienced rapid growth in the past four decades, and this trend is expected to continue in the first half of the new millennium despite setbacks generated due to regional conflicts, global safety issues due to terrorist activities, or the dramatic health situation caused by COVID-19. For example, after the COVID-19, a 10-point charter has been presented to establish balanced and sustainable tourism, travel, and hospitality industry because tourism has not ceased to exist [1]. Although the world pays a considerable price for this, the tourism industry has an unrepeatable opportunity to re-develop in line with the tenets of sustainability and to avoid various negative effects of its growth such as environmental degradation, economic exploitation, or overcrowding [2].

Therefore, the achievement of sustainable tourism entails a continuous process and requires constant monitoring of impacts and the introduction of necessary preventive and/or corrective measures whenever necessary [3]. The path of re-development and transformation which will be followed by the global tourism production system once the COVID-19 crisis has been resolved is yet to be determined.

The hospitality industry is a major part of the world's economy and embraces various accommodation facilities, from resorts to hotel and Bed and Breakfast, including restaurants or pubs. Socially, the world of hospitality is normally an important centre of social and community life and may seem significant for defining tourists' identity. The COVID-19 crisis has implemented

the demand for environments and accommodation facilities that have led to sustainability being an important factor in a company's vision and mission [2,3]. In the current literature (pre and during COVID-19) a measuring tool that assesses tourists' preference for sustainable housing can hardly be found. The Handbook of scales in tourism hospitality research is particularly important for those studying tourism [4]. It contains over 200 scales that are used in some form and content by the researchers in hospitality and tourism. Naturally, it is impossible to gather all existing scales developed, but the book pays special effort to be as comprehensive as possible by covering the scales published in the selected and top-tiered journals. In the Handbook of scales in tourism hospitality research, we have not found a specific scale for the construct that we intend to investigate.

Based on the literature and the above gap, this study aims to address this gap in current research on sustainable accommodation by developing the Sustainable Tourist Stay Scale (STSS), a self-report instrument designed to measure tourists' perceptions regarding the extent to which they prefer accommodation in tourism based on sustainable characteristics.

In this moment of crisis, the academic community continues to disseminate timely research to explore the broad social impacts of COVID-19 on tourism and hospitality as reflected in potential changes to individuals' lifestyles and daily behaviour during this trying time. The COVID-19 period should be considered as a moment of resilience, fear can lead to new choices and encourage a reconsideration of our values and motivations. The tourists travelling in the post-COVID-19 era will be unwilling to participate in mass tourism and will instead prefer the concept of "slow tourism" that focusses on local populations, longer lengths of stay and more fulfilling tourist experiences.

The potential tourists are likely to express newfound interest in destinations' hygiene, medical facilities, and population density (including local people and foreigners) when making travel-related decisions. This provides a chance to re-evaluate their tourism planning and development to ensure sustainability [5]. So, we think, in the light of the theoretical framework [1–5], that structures immersed in nature and/or the rethinking of spaces in the logic of spacing (e.g., with more zones outside) could play a fundamental role in satisfying latent and explicit demands of customers. Hence, it is increasingly important that researchers can benefit from technical studies that present tools (in our case a scale) to measure the preferences of tourists. In particular, for an understanding of how global hospitality practices are likely to change as a result of the pandemic, our paper intended to help other scholars to measure the sustainable stay construct. Consequently, we think this instrument can also help the industry's practitioners to tailor their products and services to post-COVID-19 recovery. In particular, we have separated adults and youngsters because the new generations are our future and we must consider any difference. Therefore, to consider the specificities of millennials within the entire sample, the study will verify the adequacy of the scale among young people and adults.

## 2. Sustainable Tourism and Hospitality

According to Pencarelli and Splendiani [6], in considering sustainable tourism, three types of tourist destinations can be distinguished as follows:

- (1) destination target in the formation phase, which allows ample scope for growth with regard to attendance and arrivals, without the risk of compromising a territory's environmental and social balance;
- (2) sustainable destination, one that has a balance in terms of usage for tourism purposes and ecological conditions. With this approach, the tourist flow does not jeopardise sustainability and can provide the region with economic and social benefits, as well as environmental well-being;
- (3) unaffordable destination, in this kind of destination, the development of tourism is exclusively designed to increase the flow in terms of arrivals and tourist presence. However, ecological and social problems threatening the destination's survival arise in this case. This leads to a decline in competitiveness, and consequently, the target destination's image is damaged [6].

Considering the available literature proliferation of such studies on sustainable tourism provides strong testimony to the continuing importance and legitimacy of tourism development and also impacts studies, in post-COVID-19 [1,7–11]. Two major events, in particular, influence the changes in the quality of life of the local community, namely the tourist-resident relationships and the development of the tourism industry itself [12].

Into this second branch, it is possible to mention some studies that employed the Ecological Footprint (EF) [12,13]. EF is a mathematical indicator that considers the problem of environmental sustainability starting from the load capacity of a specific territory. Studies that have adopted the EF seem to have a common point. Through some of the studies available in the literature, such as those analysing EF in Amsterdam [14] and Seychelles [15], there is a preponderance of the transport factor in the evaluation of the local and national ecological load [16], as well as the need to integrate EF with other tools to carry out more accurate assessments at the local level [17]. The role of transportation in sustainability has recently been confirmed in connection with social and economic problems such as the loss of community in neighbourhoods and less productive rural lands, like a connection among the three areas of sustainability (environmental, economic, and social) established with the Bruntland commission [18–21].

To meet the requirement of sustainability in tourism, instruments have been developed to assess the attitudes of the residents of a specific location towards sustainable tourism [22]. The importance of sustainability has an impact on the everyday behaviours of individuals, from an emotional point of view to a social one [23,24].

The relevance of this connection between everyday life and global sustainability was also underlined in a recent study that pointed out the way in which managers can adjust what the authors refer to as ‘Warm Global Thermostat’ [25]. In this study, researchers highlighted how the use of incentives for guests to participate in green programs by service managers can lead to greater involvement and satisfaction of the guests for carrying out a pro-environmental action.

These elements render the issue of who prefers sustainable accommodation and the reason behind it in sustainable tourism interesting.

In a specific study [26], the authors found that the values of sustainability can predict particular behaviours with actions to reduce energy consumption and pollution. Specifically, sustainable values can predict tourists’ preference with regard to a sustainable hospitality business over environmental behaviours. To assess their preference regarding sustainable business hospitality, the authors employed five items that are included in the sustainable values scale. In this case, the scale used to measure propensity towards sustainable hospitality consisting of items that were closely related to the concept of eco-friendly practices, in line with the focus of the study.

In a more qualitative work, Millar and Baloglu [27] indicated the principal characteristics that guests are willing to accept and prefer in hotels with regard to eco-friendly hotels. The most frequently used words/expressions were ‘efficiency’, ‘recycling’, ‘environmental-friendly’ and ‘sustainability’, as well as practices related to these words.

### 3. Sustainable Tourists

Sustainable tourists were at first generally considered as a softer kind of ecotourists, because the term ecotourist indicated various types of tourists interested in protecting the environment. Lindberg [28] identified four types of ecotourists, ranging from those who are motivated to travel to unspoiled and unpopular places. to those who include a naturalistic destination on a wider and more traditional tour. Over time, the concept has become more complex and increasingly associated with the theoretical issues related to the classification of sustainable tourist falls under. For example, Dinan and Sargeant [29] (p. 7) defined a sustainable tourist as “someone who appreciates the notion that they are a visitor in another person’s culture, society, environment and economy and respects this unique feature of travel”. More recently, Shamsub and Lebel [30] visualised sustainable tourists as those who agree with a code of conduct that recommends the way in which they should behave

as visitors; they further appreciate the fact that their activities have an impact on the environment and modify their actions accordingly; they would like to make an economic contribution to the host economy and therefore purchase local products such as crafts and food.

With respect to this last perspective, young people seem to play a specific role [31], in particular the millennials (born after 1984). The “Y generations” is associated with the following characteristics that may arise in classroom or work settings [32]: (a) higher self-esteem, (b) narcissism, (c) anxiety, (d) depression, (e) lower need for generalised social approval, (f) more external locus of control orientation, and (g) more agentic traits such as assertiveness, especially for women. Moreover, as reported by the Pew Research Center [33,34], millennials are more likely to support renewable energies and consider the issue of global warming, as a real threat compounded by concrete evidence. Nevertheless, young people choose to not define themselves as environmentalists. Millennials indeed have shown specific features regarding sustainability in some European research [35,36], confirming the international tendency to consider them as strongly involved in environmental and sustainable issues even if they do not consider themselves as such.

Schoolman and Coll’s research [37] observed that millennials currently enrolled in a major public university, while broadly supportive of public transportation, recycling, and energy and water conservation, and were much less interested in incorporating environmental concerns into decisions regarding food and in actively reducing their consumption of material things. This information suggests that young people may constitute a different survey population as compared to adults and specifically in the Italian context.

There are some characteristics of the millennials’ segment that are most likely to cause a significant disruption in the current structure of the tourism sector. They have strong digital skills and a high degree of permanent connectivity and search for outstanding experiences and altruistic behaviours [38]. In the study by Veiga et al. [39], emerges that these are the practice of volunteer tourism, search for places not connected with tourism and adoption of new, disruptive technologies. These aspects are relevant for the millennials and useful for a better understanding of their tourism experience by connecting their value orientations to their meaning travel and discovering profiles of young tourists that can be targeted both now and in the future by tourism organisations [35].

Further, new technologies have enabled the customisation of tourist experiences. Young travellers, both millennials and Post-millennials, consider contemporary tourism as a social and cultural experience that encourages socialisation and identity construction, thus according to a new meaning to their choices as tourists. Holidays are planned according to their taste and expectations, with a growing interest in new tourism practices and niche proposals [40].

The destinations will be critical for building resilience, agility and speed to combat future risks and accelerate the sustainability transition. In the immediacy of the pandemic, health and safety concerns have taken precedence, but the need for sustainable, resilient businesses is even greater during the rebuild.

In terms of choosing sustainable travel options, millennials exhibit the strongest interest while higher prices are likely to decrease interest for Generation Z [41,42]. Overall, consumers of all ages will increasingly seek out sustainable travel experiences. In any case, younger generations, such as millennials, will help bring about the radical change in behaviour and attitudes with regard to how and why people travel.

In synthesis, if the World Economic Forum [43] argues that business around the world could shift more rapidly to implementing green practices, the hospitality industry itself should innovate in this sector in order to survive. Therefore, academia could also help to better understand the implementation of the green economy principles’ [44]. To measure tourists’ perceptions regarding the degree to which they prefer accommodation in tourism according to sustainable characteristics is an important point where the hospitality industry can start.

## 4. Method

### 4.1. Research Goals

The purpose of this study is to address this gap in current research on sustainable accommodation by developing the Sustainable Tourist Stay Scale (STSS). It constitutes a self-report instrument designed to measure tourists' perceptions regarding the degree to which they prefer accommodation in tourism according to sustainable characteristics. The aim of this study is to test and refine the 12 items proposed for the test including the invariance test for the subgroups of young people and adults.

### 4.2. Participants

The sample ( $n = 621$ ) was composed of 360 females (58.0%) and 258 males (41.5%) (Missing = 3; 0.5%) with a mean age of 33.05 (DS = 13.76; range 18–74).

The young people group ( $n = 434$ ) was formed by 279 females (64.3%) and 152 males (35.0%) (Missing = 3; 0.7%) with a mean age of 25.40 (DS = 3.96). The adult sample ( $n = 187$ ) consisted of 106 males (56.7%) and 81 females (43.3%) with a mean age of 50.80 (DS = 11.89).

### 4.3. Procedure and Materials

In order to assess the preference of sustainable hospitality in tourism, we have developed a short questionnaire as an adaptation of a survey conducted in 2012 from Ces. Co. Com. (Advanced Studies Center about Consumption and Communication) [45]. The instrument was utilised by the University of Macerata [10,30]. The scale is a 12-item—self-report instrument. Each item is rated on a 5-point Likert-type, ranging from 1: “Strong Disagreement” to 5: “Strong Agreement”. Examples of items are: “Program with a series of actions carried out to enhance local characteristics”, “Program with actions to reduce energy consumption and pollution”. The instrument assesses contact and respect for the environment, sustainable mobility, and choice of vacation less standardized. The title of the questionnaire is “Sustainable tourist stay scale” (Appendix A). Each participant anonymously completed the questionnaire and provided his/her informed consent. The sample is a convenience sample and the participants are taken from a group of people easy to contact or to reach: young and adult people. Young people were asked to participate in a study concerning social psychology issues, whose participation would have been voluntary, without any extra credit for the course. Adults were contacted on the Italian territory directly by the researchers. Completing the questionnaire took 15 min and all participants accepted.

This research was conducted by respecting the Apa Ethical Principles of Psychologists and Code of Conduct (<https://www.apa.org/ethics/code/ethics-code-2017.pdf>) and the rules of the Declaration of Helsinki of 1975 (<https://www.wma.net/what-we-do/medical-ethics/declaration-of-helsinki/>) revised in 2013. As per the point 23 of the declaration, this study was approved by the institutional ethic committee of the PhD meeting curriculum in the University of Macerata., University of Macerata (number cycle 31, 11-09-2017).

### 4.4. Statistical Analyses

*Descriptive Statistics:* For each subject, the missing values have been replaced with the mean [46]. In the sample, the normality of data distributions for each item was analysed by the skewness and kurtosis [47]. Following these descriptive statistics, seven univariate outliers were removed [48].

*Exploratory and Confirmatory Factor Analysis:* The sample was randomly split into two sub-samples [49]. To test the factor structure of the instrument, the Exploratory Factor Analysis (EFA) was performed in the first sub-sample. The approach to extracting factors was the Principal Axis Factoring; the criterion for determining the number of factors to extract was the scree plot [50] and the eigenvalue  $> 1.0$  [51]. Confirmatory Factor Analysis (CFA) was performed to evaluate whether the factor models tested via EFA provide a good fit to the data in the second sub-sample [52]. The factorial structure of the instrument was examined within the framework of structural equation modelling (CFA). The CFA was

carried out through the Maximum Likelihood procedure [53]. The adequacy of confirmatory solutions was assessed using the following different Fit Indexes [54,55]: traditional chi-square ( $\chi^2$ ) goodness of fit test (a model fits the data well when  $\chi^2$  is not significant:  $p \geq 0.05$ ), RMSEA (Root-Mean-Square Error of Approximation), CFI (Comparative Fit Index), GFI (Goodness of Fit Index), and AGFI (Adjusted Goodness of Fit Index). The satisfactory values were as follows: RMSEA  $\leq 0.08$ ; CFI  $\leq 0.95$ ; GFI  $\leq 0.90$ ; AGFI  $\leq 0.85$ . The acceptable values were as follows: CFI  $<0.90-0.94>$ ; RMSEA = 0.08. The good values were the following: CFI  $\geq 0.95$ ; RMSEA = 0.06 [56–58]. The Modification Indexes were computed to analyse the parameter that could contribute to improving the goodness of fit [59].

*Measurement Invariance:* To verify the measurement invariance of the instrument with respect to digital natives and non-digital natives, a Multigroup Confirmatory Factor Analysis (MG-CFA) was performed, that began with a separate baseline model for each group. The configural invariance model (M1) was established when the same factorial pattern was specified for each group but with factor loadings and intercepts free across samples; in the metric invariance model (M2), factor loadings were constrained to be equal across groups; in the scalar invariance model (M3), factor loadings and intercepts were constrained to be equal across conditions [52,60–62].

Model fit was assessed using  $\chi^2$  statistical tests, the Root Mean Square Error of Approximation (RMSEA) and the Comparative Fit Index (CFI). The evaluation of invariance was estimated on the difference between CFIs ( $\Delta$ CFI). A value of  $\Delta$ CFI smaller than or equal to  $|0.010|$  (in absolute values) indicates that the null hypothesis of invariance should not be rejected [63–67].

*Internal Consistency:* Internal consistency of the factors was estimated by the Cronbach's alpha. Cronbach's alpha values were as follows:  $>0.90$  Excellent;  $<0.80-0.90>$  Good;  $<0.70-0.80>$  Acceptable;  $<0.60-0.70>$  Questionable;  $<0.60$ .

SPSS V.16.0 [68] was used to calculate Descriptive Statistics, EFA, and Alpha reliability coefficient. Also, AFC, Modification Indexes, and Invariance Measurement were computed through LISREL V.8.71 [69].

## 5. Results

### 5.1. Descriptive Statistics

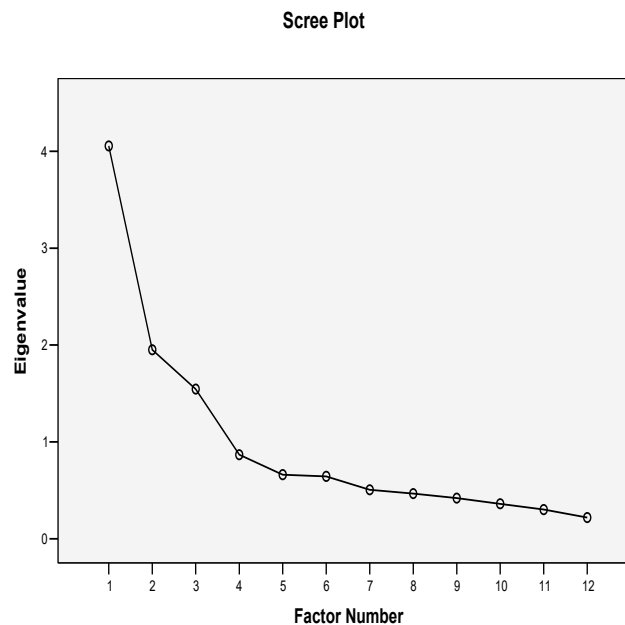
Table 1 shows the descriptive statistics of the instrument in the total sample. The inspection of skewness and kurtosis indicated that the values respect the normality of data distributions.

**Table 1.** Mean, standard deviation, normality indices of the instrument items ( $n = 621$ ).

Items	Mean	SD	Skewness	Kurtosis
Item 1	3.386	1.2909	−0.350	−0.935
Item 2	3.794	1.1223	−0.796	−0.121
Item 3	2.767	1.1958	0.116	−0.835
Item 4	2.619	1.1655	0.280	−0.734
Item 5	3.436	1.1350	−0.317	−0.752
Item 6	3.643	1.1274	−0.470	−0.552
Item 7	3.842	1.0523	−0.839	0.190
Item 8	3.561	1.1178	−0.436	−0.573
Item 9	3.958	1.0040	−0.942	0.532
Item 10	2.940	1.0842	−0.011	−0.519
Item 11	2.702	1.2123	0.244	−0.867
Item 12	2.789	1.1814	0.138	−0.728

## 5.2. Exploratory Factor Analysis

The sub-sample for EFA was composed of 310 subjects (males = 128; females = 180; and non-specified gender = 2). The age ranges from 18 to 74 years (mean age = 29.14; SD = 14.65). The statistical procedure of initial EFA indicated good values of items (Bartlett's Test:  $\chi^2_{(66)} = 1380.373$ ;  $p < 0.001$ ). Kaiser-Meyer-Olkin showed an adequate factor structure (KMO = 0.767). Scree Plot (Figure 1) and Eigenvalue > 1 procedures identified a three-factorial structure. The initial eigenvalues were as follows: 4056; 1952 and 1545.



**Figure 1.** The scree plot identified a three-factorial structure.

In the three-factorial structure (Table 2), all items showed loadings higher than |0.30| for the latent factor, except item 4 (with loading values of 0.472 on the second factor and  $-0.435$  on the third dimension). Factor 1 accounted for 29.675% of the total variance; factor 2 for 12.001% and factor 3 for 9.609% of the total variance. Therefore, this factor solution explained 51.28% of the total variance. The factorial solution with oblique rotation is shown in Figure 1.

**Table 2.** Factor loadings of items in three-factorial model ( $n = 310$ ).

Item	Factor Loadings		
	1	2	3
7	0.835	-0.128	0.041
9	0.749	0.103	0.019
6	0.739	-0.058	-0.050
8	0.661	0.057	-0.011
5	0.327	0.288	-0.291
11	-0.022	0.704	-0.001
12	-0.048	0.691	-0.015
10	0.076	0.586	0.115
4	0.001	0.472	-0.435
3	0.025	0.214	-0.756
2	0.033	-0.103	-0.727
1	0.019	-0.108	-0.619

### 5.3. Confirmatory Factor Analysis

The sub-sample for CFA was composed by 311 subjects (males = 130; females = 180; gender not specified = 1). The age range was from 26 to 73 years (mean age = 36.95; SD = 11.584).

The aim of the CFA was to confirm the factor structure of the instrument that emerged in the EFA. In this model items 5-6-7-8-9 loaded on the first factor; the second factor included items 10-11-12 and items 1-2-3 loaded on the third factor.

Results are shown in Table 3. The three-factor oblique model, without item 4 with double factor loadings, showed an acceptable fit. Based on the content of the items the factors have been labelled as follows: the first as ‘Sustainable stay features’, the second as ‘Less-massified conditions’ and the third as ‘Destination facilities options’.

**Table 3.** Fit Indices for the structural model tested ( $n = 311$ ).

Model	$\chi^2$	df	RMSEA	90% RMSEA	CFI	GFI	AGFI
Three-factorial model	96.15 *	38	0.070	0.0529; 0.0879	0.948	0.947	0.907

\*  $p < 0.001$ . df = degrees of freedom; RMSEA = Root-Mean-Square Error of Approximation; CFI = Comparative Fit Index; GFI = Goodness of Fit Index; AGFI = Adjusted Goodness of Fit Index.

### 5.4. Measurement Invariance

Measurement Invariance across age was tested through a multiple-group confirmatory factor analysis. The baseline model tested was the three-factorial model, without item 4. The instrument showed a metric invariance because the value of  $\Delta$ CFI was smaller than  $|0.010|$  cut-off (Table 4). Therefore, the loadings invariance of the “Sustainable tourist stay scale” was confirmed between young people (millennials) and adults

**Table 4.** Tests of measurement invariance across age.

Model	$\chi^2$	df	$\Delta$ df	RMSEA	RMSEA90% CI	CFI	$\Delta$ CFI	Model Comparison
Baseline model millennials ( $n = 434$ ) *	109.56 *; $p < 0.001$	38		0.066	0.0517; 0.0806	0.956		
Baseline model non-digital native ( $n = 187$ ) **	136.44 *; $p < 0.001$	38		0.118	0.0970; 0.140	0.896		
M1	317.38 *; $p < 0.001$	87		0.092	0.0817; 0.104	0.899		
M2	349.51 *; $p < 0.001$	98		0.091	0.0808; 0.101	0.887	-0.002	2 vs. 1
M3	490.96 *; $p < 0.001$	117		0.102	0.0924; 0.111	0.840	-0.047	3 vs. 2

Note: M1 = Configural invariance; no constraints. M2 = Weak or metric invariance; with the factor loadings identical across the group. M3 = Strong or scalar invariance; with factor loadings and latent means identical across the group. \* Error Covariance of TUR5 and TUR3; TUR8 and TUR6; TUR10 and TUR3. \*\* Error Covariance of TUR5 and TUR3; TUR11 and TUR7; TUR12 and TUR5.

### 5.5. Internal Consistency

Internal consistency of the subscales was good:  $\alpha = 0.81$  for the first factor;  $\alpha = 0.69$  for the second factor and  $\alpha = 0.65$  for the third factor. According to the corrected item-total correlation, items appeared suitable as an indicator of their construct.

## 6. Discussion

The COVID-19 pandemic has changed the world forever and impacted heavily on all individuals, and on the tourism demand and hospitality industry [1].

In Italy, 88% of tourists, even before the COVID-19 pandemic, had replied that they expected having moments of contact with nature from a sustainable holiday. Furthermore, the following labels influenced the sustainable choice: environmental sustainability certification and energy-saving



certification [45]. These attitudes were reiterated and implemented during the pandemic which, in part, was attributed to indiscriminate use of the environment and favoured in its spread by pollution. A transition to a more environmentally sustainable future might also pose major economic and social challenges for tourism, particularly in the less developed communities, where people depended on the hospitality industry for their livelihoods, prior to the COVID-19 crisis. In this sense, Jones's study [70] is significant, which aimed at reviewing changes in the relationships between sustainability and the hospitality industry following the COVID-19 crisis.

Tourism cannot be easily automated and people are central to successful hospitality. Nevertheless, sustainable tourism's existing ideas as strategy planning, energy consumption cuts, local food production, and short-haul travel could become an opportunity.

According to Bernard Lane as affirmed in his blog [11]:

"New marketing, stressing quality not growth, should be used. [...] Better traveller care is needed on public transport systems [...]. Pilot projects should test slow tourism, rail-based low emission tourism, hands-on cultural and heritage tourism [...]. The sustainable tourism can help conservation and can use exciting new ideas, including re-wilding, live heritage interpretation, and biodiversity experiences. There should be competitions for new forms of sustainable tourism [...]. Tourism's financial base rests on accommodation: it is central to recovery. To calm visitor fears, a certified programme of deep cleaning is needed. It may be easier and quicker to get small scale locally owned accommodation back into use than large company-owned hotels [...]. Change is difficult. It needs risk-taking, persuasion and a passion to succeed".

For the above reasons, scholars, local governments, and businesses should now work in partnership to develop the market research, training and governance systems.

Unfortunately, the literature has, for years, already presented a gap in the measurement of sustainable hospitality. There are no validated scales that consider this construct by measuring the preferences of tourists, both the millennials (the clients of today and tomorrow) and the elderly (the clients that are currently attractive because of a consolidated economy).

This research tries to test the validity of an instrument that can fill this gap and can provide a valid help in understanding sustainable tourism demand, also considering that sustainable tourism will increasingly be a resource for the hospitality industry post-COVID-19.

In synthesis, the present study was the first step of the Sustainable Tourist Stay Scale (STSS) validation work in Italy, and the main aim of this paper was to explore and validate its psychometric characteristics. In particular, the objective was to ascertain if the STSS forms a valid and useful instrument for measuring sustainable accommodation preference in tourism in a sample of young and adult Italians.

Sustainable tourists can be defined as those who agree with a code of conduct, appreciate the fact that their activities have an impact on the environment and tailor their actions accordingly; furthermore, they are those who would like to make an economic contribution to the host community [29]. In accordance with the available literature [34,35] on the subject and previous works conducted in Italy [36,45], the STSS scale was constructed and validated with the intent to define a set of items in order to determine the preference of a tourist towards a sustainable stay in a destination.

The results of both EFA and CFA revealed a three-factor structure appearing consistent with the available literature and research already conducted in the field. The three factors were the following: 'sustainable stay features', 'less-massified conditions', and 'destination facilities options'.

In the first factor, the following core features of the destination relevant to sustainability have been included: the enhancement of the area and its characteristics and, the moments of contact with nature and programs with actions to reduce energy consumption and pollution. These features are considered, as a whole, as different aspects of the same concept of sustainability [1,28,29,71].

On the other hand, the second and the third factors include the conditions regarding the possible 'sacrifice' that can lead to a sustainable holiday and the optional features of destination facilities.

The 'less massified conditions' factor seems to be a related condition but is not involved in the core features of sustainability like the third factor that refers to another choice in order to stay in a facility with environmental certification and where one can move with a bike or public transportation.

From a general point of view, these results seem to privilege the first factor like a centre of gravity of the fundamental characteristics of sustainable stay, while the second and the third ones may be seen as a related variable that people may adopt or not.

These results are consistent with the literature [11,31,35]. The first factor collects the characteristics of sustainability established in the aforementioned definitions and the most recent ones [1,29,70]. Moreover, the inclusion of item 5 in the first factor has a specific value. In the literature, the implication of nature protection is a determining element in defining the number of people who have sustainable behaviours towards the environment [71].

The EFA and CFA showed that the protection of nature and the appreciation of an intact nature could be purposes belonging to a larger concept, connected with the community development and the local people meeting.

The second factor seems to define sustainable hospitality as a condition that is distinct from the possibility of adaptation. This data could indicate that sustainability is included in the characteristic of the destination like a combination of different features connected to each other and that the condition of adaptations is only a secondary issue. This second factor could represent a choice of the tourist but not a characteristic of the place of destination where one wishes to stay. The third factor refers to the specific target destination options that are the environmental certification and sustainable transportation to arrive and move around the destination. This third factor confirmed the importance of sustainable transportation into features of sustainability, although these items are expected in the first factor considering the relevance of transportation for the general topic of sustainability [1,11,14,15,21].

Concerning the invariance across the subgroups of young people (millennials) and adults of the Italian version of the STSS, results confirm that even if the configural and metrical three-factor structure is the same across the groups, there are differences in latent means between the groups. This seems to confirm that millennials and adults have some specific differences concerning sustainability that should be examined separately. Consequently, all these results lead to a necessary distinction between young people and adults regarding tourism accommodation and programs with sustainability characteristics, addressing the gap in the evaluation of sustainable stay in tourism and indicating two different markets. For example, as confirmed by Lane [11]: 'special emphasis should be given to the 60–80 years-old market. This market often has secure disposable incomes: it receives secure pensions and is unlikely to have unemployment issues. This target group is keen to have holiday experiences before it is no longer physically or mentally viable'. The characteristics of the millennials with the greatest potential to disrupt the tourism sector are their strong digital skills and altruistic and/or sustainable behaviours, while also searching for exciting experiences. Millennials will not respond positively to only a hedonic travel offer because they are pushed by self-transcending values and they withdraw themselves from escapism travel. On one hand, the search for places that are not connected to tourism and adoption of new, disruptive technologies can have harmful implications for tourist destinations and residents. On the other hand, tourism agents who fulfil the millennials' demands can reduce relation and interactions highly valued by millennials. According to the literature [39], this requires close monitoring.

## 7. Conclusions and Limitations

In this work, we tried to test the structure of a series of items to build a small scale, the Sustainable Tourist Stay Scale, in a sample of young people (millennials) and adults. Specificities have emerged in the literature in the youth group as opposed to the adult group. The CFA analyses provided a sufficiently good three-factor structure, and the structural invariance analyses confirmed the reliability of the scale with certain differences between the subgroups starting from a common structure. These differences should be further investigated, however, the scale structure was coherent both analytically and

theoretically for the following three factors: sustainable stay features, less-massified conditions, and destination facilities options. These factors suggest the idea of a sustainable permanence based on some more conceptual and perspective elements (first factor) and some operational choices related to the actualisation of that perspective (second and third factors). In other words, the environmental protection in the perspective of a sustainable tourist seems to be like a result of economic and practical choices carried out by tourists. This point of view seems to be in line with the first definition of sustainable tourist, like a soft ecotourist proposed by Lindberg [28], making the theoretical distinction between sustainable tourism and ecotourism still a bit nuanced.

The results indicated a distinction between millennials and adults regarding tourism accommodation with sustainability characteristics, showing two different markets for the sustainable stay in tourism. In any case, it seems clear that the future travel experience will be personalised, delivering seamless and safe services that are high value and consumer-centric and have a low impact [11,72].

The results indicate the need for further research that test these items on two different samples, namely the young people and the adults, in order to define the usefulness of the items for evaluations and practical applications. Even if the CFA has found a common structure between millennials and adults, there is a difference due to the absence of the scalar invariance on the three confirmed factors. It would also be useful to replicate the study on larger subsamples to verify the stability of the results. Finally, future research could consider the relations among the STSS and other scales with regard to the attitude towards environmental sustainability or eco-friendly behaviours to further assess the construct validity.

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## Appendix A

How much attention do you give when you go on vacation?

1. Location easily accessible by public transportation
2. Places to move easily on foot or by bike
3. Accommodation facilities with environmental certification
4. Family-run accommodation facilities
5. Places where nature is intact and protected
6. Program with actions to reduce energy consumption and pollution
7. Program with a series of actions carried out to enhance local characteristics
8. Authentic relationship with the local population
9. Moments of contact with nature
10. Having to adapt to greater inconveniences
11. Where there are few tourists
12. Opt for off-season period

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