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RESEARCH ARTICLE

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Exploring rural tourism experiences through subjective perceptions: A visual Q approach

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Abstract

Aim of study: To explore rural tourists' views in order to identify different market segmentation in relation to rural tourism experiences.

Area of study: Spain.

Material and methods: Visual Q, a personal subjectivity research methodology, was applied to present both visual and linguistic aspects so that tourists can more intuitively recognize and answer questions regarding their experiences. Thus, it enables researchers to explore rural tourism experiences from tourists' subjective perceptions.

Main results: There are three primary segments of tourist experiences in rural tourism: 'Occasion driven visitor', 'Active leisure seeker' and 'Rural immersion pursuer' and across all visitors, a common pursuit of 'A pleasant break'.

Research highlights: This paper suggests that rural tourism should offer a range of value propositions, thereby escaping the existing monotonous ones.

Additional keywords: mixed methods research; tourists' subjectivity; segmentation

Abbreviations used: PCA (Principal Component Analysis); SE (Standard Error)

Authors' contributions: WA performed the research, analyzed the data, and drafted the manuscript. SA revised the manuscript. Both authors conceived and designed the research, read and approved the final manuscript.

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Introduction

Rural tourism in Spain was developed for the purpose of overcoming the tendency of Spanish tourism to be focused on sun and beach, a focus which had reached maturity (García, 1996; Besteiro, 2006). Additionally, rural tourism can assist agriculture, where holdings are at risk from economic pressures (Blanco, 1996). Rural areas have made an effort to provide special experiences through making an investment in the cultural and natural heritage in response to the increasing demand for the possibility to escape from the city and experience the tranquility of the countryside (García, 1996; Yagüe, 2002; Besteiro, 2006). This has helped rural tourism grow rapidly. Between 2013 and 2017, after a long period of ups and downs, the total annual number of tourists in rural tourism in Spain increased by more than one and a half million and exceeded four million (INE, 2017).

But despite the growth in scale, the occupancy rates and the average stay length in rural tourism have decreased, leading to a decline in competitiveness (Campón-Cerro *et al.,* 2017). According to INE (2018), its prices have risen at a much lower rate than the rest of the sector. This is due to the fact that in rural tourism, there is greater sensitivity to price among tourists (Correia Loureiro & Miranda González, 2006). The answer to the question "What do rural tourism clients look for when they travel?" is merely "to do nothing" (Grande & Maynar, 2010). This is evidence that the value which rural tourism proposes to tourists is limited by a lack of diversity. Therefore, it is necessary to take measures to overcome the limit of price sensitivity

through various customer value propositions. A variety of customer value propositions in rural tourism can be made from providing clients with diverse experiences

Tourist experiences are accepted as the most critical factor of innovation, competitiveness and success in the tourism field (Neuhofer, 2016; Quinlan Cutler *et al.,* 2018). Accordingly, several studies in the field of rural tourism have been conducted to understand tourists' experiences (Figueiredo & Raschi, 2012; Choo & Petrick, 2014; Kastenholz *et al.,* 2018; Pelegrín *et al.,* 2019) and to analyze tourists' experiences-based market segmentation (Agapito *et al.,* 2014; Kastenholz *et al.,* 2015). It is essential to understand the subjective meanings and perceptions related to individual experiences in rural tourism (Uriely, 2005). Tourist experiences should be understood as highly variable and subjective, characterized mainly by emotional and symbolic aspects (Otto & Ritchie, 1996). However, existing quantitative statistical methodologies make it possible for researchers' viewpoints to intervene in data collection by previously establishing a hypothesis about the experience of the tourist group and then merely verifying it, and they also tend to ignore in-depth information about individuals by relying on collective statistics and comparisons. Thus, many scholars argue that it is necessary to investigate with supplementary methods that enable a deeper understanding of tourist experiences (Neuhofer, 2016; Brown & Osman, 2017; Quinlan Cutler *et al.,* 2018). The Q methodology, which is a personal subjectivity research methodology, is recognized as an appropriate alternative to complement the limitations of existing research and enables researchers to explore tourist experiences in rural tourism and to describe the important experiences extracted from tourists' subjective perceptions (Swaffield & Fairweather, 1996). It is a very powerful methodology used to reveal problems to which personal subjectivity is related (McKeown & Thomas, 2013). At the same time, it has clear characteristics of a quantitative statistical approach and a qualitative assessment of individual concepts (Davis & Michelle, 2011).

In this study, the visual Q methodology was applied to present both visual and linguistic aspects so that tourists can more intuitively recognize and answer questions regarding their experiences. The purpose of this study was to explore rural tourists' perceptions in order to identify different market segmentation in relation to rural tourism experiences for rural tourism providers, as well as policymakers in local governments, amongst others.

Material and methods

Rural tourism experiences

Rural tourism refers to multifaceted and niche activities consisting of various combinations of activities such as cultural tourism, nature tourism, ecotourism, wine, food, sports and adventure (Lane, 2009). As opposed to urban areas, rural areas are generally regarded as open spaces with small residences and small settlements, filled with rural flora and fauna. Rural tourism is based on rural areas characterized by natural resources, traditions, open space, small scale, and local control (Lane, 1994).

Rural tourism experiences must be perceived as an overall experience through a variety of environments, attractions, resources, people and services provided by rural destinations (Kastenholz *et al.,* 2018). There are many purposes and reasons for the increasing pursuit of rural tourism experiences. Varied studies on rural tourism have shown that the key motivations for tourists to decide on rural tourism are access to nature, rest, spending meaningful time with family in places different from the city, meeting with friends, recreation, sports activities, and experiencing traditional lifestyle in rural areas (Figueiredo & Raschi, 2012; Kline *et al.,* 2014; Kastenholz *et al.,* 2018).

Studies have shown that nature and landscape are important elements of the tourism experiences that tourists pursue (Frochot, 2005; Figueiredo & Raschi, 2012; Kastenholz *et al.,* 2012). Access to nature for urban residents is achieved through different landscapes that can be experienced visually (Woods, 2003). Occasionally, rural tourists seek nature to escape from the stress of urban life (Kastenholz *et al.,* 2018). Tourists pursue rural tourism experiences thinking about the opposite of negative emotions such as the stress of urban life. In other words, positive emotions are promoted through rural tourism, a medium that can escape urban life (Kastenholz *et al.,* 2018). This is related to the search for authenticity of urban people who want to leave their current imperfect life full of stress and reach an ideal past (Sims, 2009). Lastly, the rural way of life, that is, traditional and authentic, is another important factor in rural tourism (Sims, 2009).

Some rural tourists choose rural tourism for human interaction with the local people living in rural areas (Frochot, 2005). Local people are not only those who create rural assets and add value to them, but they themselves become a part of the experiences that rural tourism offers (Garrod *et al.,* 2006). A personal experience stemming from specific interactions between hosts and tourists is regarded as a valued factor in rural tourism (Choo & Petrick, 2014). It can have influence on bonding with the tourist on various levels such as the physical, rational, emotional, sensorial, and spiritual level (Gentile *et al.,* 2007; Pelegrín *et al.,* 2019). The meeting of tourists and locals in the rural village environment can also play an important role in improving the quality of rural tourism experiences (Kastenholz *et al.,* 2012).

Visual Q methodology and its use

Q methodology is called semi-qualitative because the analysis is very quantitative but the interpretation is broadly

qualitative (Ramlo & Newman, 2011). Q methodology seeks an understanding and interpretation of subjective preferences and perspectives (Swaffield & Fairweather, 1996). It is a modified factor analysis technique, which is different from the widely used R methodology. The difference between them is that the former has the purpose of measuring the correlations between subjects in a sample, while the latter measures the correlations between variables (Naspetti *et al.,* 2014). Q methodology has different characteristics from the existing research methodologies in terms of a set of factors which express individuals' perceptions and enable their opinions to naturally emerge without being prompted by a researcher (Bacher *et al.,* 2014).

Several studies have shown us that images are more useful than words in mental processing (Azizian *et al.,* 2006; Schlochtermeier *et al.,* 2013). Using photographs in Q methodology has been thought to provide a lot of advantages for visitor experience assessments in tourism (Swaffield & Fairweather, 1996). It is easy to sort photographs because it is not an abstract process (Daniel, 2001). Images are considered to lead to a clearer emotional response than words. We can find that differences exist in the way of experiencing emblematic stimulants, such as images, that lead us to a more realistic interpretation (Kiefer & Pulvermüller, 2012). Since photographs, as well as statements, are supposed to offer an experience that is related to reality, their evaluation by subjects corresponds to their visual reaction to the actual landscape (Amedeo *et al.,* 1989). Through photographs, participants can also recall emotions, feelings and remembrances that cannot be expressed in statements. Visual Q enables us to systematically select a set of photographs, which we call the Q-set (Amedeo *et al.,* 1989). The velocity of image processing is faster than words as images are the easiest way to approach true meaning and an interpretation is not required (Schlochtermeier *et al.,* 2013).

The application of visual Q, which is the use of images within the Q methodology, has been appreciated as an easy method to understand the task and also does not require a complex process (Daniel, 2001). Visual Q is expected to offer the respondents a realistic experience of the actual places visited due to the use of images instead of words or statements, which enables them to think of memories and recall feelings (Zube & Pitt, 1981). Since visual Q, which is the Q methodology in conjunction with photographs, was initially adopted as a technique for evaluating landscape values (Zube *et al.,* 1975), it has had a wide range of applications in various studies. Naspetti *et al.* (2016) applied visual images and the Q methodology to describe tourists' perceptions of photovoltaic systems, connected to their effect on the landscape. The factors extracted were innovative design advocates, mimics lovers, and farm managers. In order to offer useful proposals and in-depth analysis, Fairweather and Swaffield (2001) investigated tourist perceptions and attitudes on Kaikoura tourism in New Zealand applying the visual Q methodology. The result of this investigation is that five primary factors: family coastal holiday, picturesque landscape, coastal community, maritime recreation, and eco-tourists were identified in Kaikoura. Additionally, Hardy and Pearson (2018) used the Q methodology with images to analyze the attitudes of stakeholders toward sustainable tourism development. This study found that the opinions of individual stakeholders and those of stakeholder groups on sustainable tourism development do not always coincide.

Methods

Visual Q methodology was applied in accordance with McKeown and Thomas's (2013) five steps: 'Concourse' definition, 'Q-set' development, 'P-set' definition, 'Q-sort' collection and factor analysis.

The concourse of these steps provides the process to collect the population's thoughts, opinions, recognitions and perceptions related to the topic of the study (Van Exel & De Graaf, 2005; Previte *et al.,* 2007). In this study, we also used netnography methodology, which enables us to determine consumer awareness and conduct perception research by depicting consumer behavior in the online environment (Kozinets, 2002) in order to arrive at the 'Concourse' definition. We extracted experiences by analyzing consumers' opinions about rural tourism on online communities. Based on the number of visitors, we selected three target online communities: toprural.com, escapadarural.com, and clubrural.com and we analyzed tourist experiences in rural tourism in the following way: analyzed the opinions posted within the last 3 years; analyzed opinions assigned by regions, price level and trip type; reflected not only positive opinions, but negative ones as well; applied the opinions from the unpopular places as well as from the popular ones; opinions were individually reviewed by both researchers. We analyzed 1,000 opinions and derived 50 experiences that tourists pursue in rural tourism (Fig. 1).

The Q-set is the step of confirming attributes such as words, sentences and images to be used in the Q survey. The Q-set consists of the thematic attributes extracted from the concourse, which will be applied in the Q analysis. The selection of the Q-set is very important but is largely determined by the discretion of the researcher through structured or unstructured methods (McKeown, 1998). Regardless of which structure is selected, researchers should choose opinions that are different from each other to endow the Q-set with representativeness (Van Exel & De Graaf, 2005). All possible expressions related to the subject extracted from all possible viewpoints are utilized in the Q-set (Zabala, 2014). Usually a Q-set collection is made up of scales of between 40 and 80

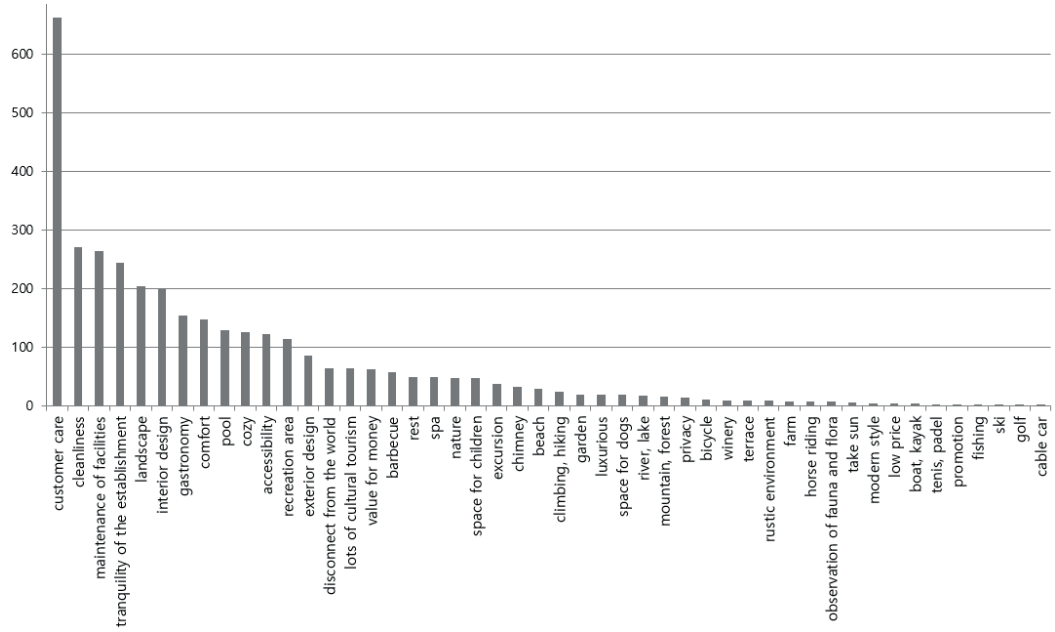

Figure 1. Experiences in rural tourism. N=1,000, Plural response, Unit: persons

attributes (Watts & Stenner, 2012). In this study, we decided to use all of the 50 possible experiences in rural tourism as the Q-set discovered through the use of the netnography methodology (Kozinets, 2015). We selected photographs that described the 50 experiences well and created cards that could display images and sentences at the same time (Fig. 2).

The P-set means a group of interviewees that participate in Q-sort collection. The P-set plays a role in the representation of the collected opinions. Since the purpose of the research completed the Q methodology is not to generalize, but rather to analyze individual subjectivity, the number of samples, which enables us to generate and compare factors, is sufficient. Usually, the number of the P-set is not higher than the Q-set. The P-set is selected by following a structured sampling with experience and knowledge on the subject irrespective of the random sampling (Van Exel & De Graaf, 2005). Those who participate in the research should be chosen if they have the possibility of expressing central or interesting viewpoints (Watts & Stenner, 2012). The current P-set was created by recruiting participants in two major groups: tourists with travel experience related to rural tourism during the past three years and experts like professors, officers and members of rural tourism organizations. Our P-set consisted of 50 participants: 25 customers and 25 experts (Table 1).

According to Coogan and Herrington (2011), the Q-sort sequences the opinions that make up the Q-set and shows the participants' subjectivities (Fig. 3). Participants were expected to sort the attributes of the Q-set in accordance with their subjective preferences. At the beginning, participants classified the photographs into three groups; what they feel is most important, what they feel is most unimportant and what they feel neutral about. Then they sorted 50 photographs to the Q-grid map distributed by a force similar to normal distribution which was divided into 11 groups from 'most unimportant' (-5) to 'most important' (+5). They positioned things that they thought were the most important on the right side and the things they thought were the most unimportant to the left side. Finally, they were asked to account for the reason for their selections by qualitative interview. Such interviews contribute to improving the quality of research as well as assist in making plenty of data available with the result from the statistical analysis (Fairweather & Swaffield, 2001). These additional qualitative studies allow us to delve

Table 1. Organization of the P-set.

Demographic category	Answers
Expertise	Customer: 25 (50.0%), Expert: 25 (50.0%)
Gender	Male: 18 (36.0%), Female: 32 (64.0%)
Age	Under 30: 10 (20.0%), 30-39: 13 (26.0%), 40-49: 13 (26.0%), 50-59: 10 (20.0%), 60 and older: 4 (8.0%)
Frequency of visits in 3 years	1-4 times: 40 (80.0%), 5-9 times: 6 (12.0%), 10 and more times: 4 (8.0%)
Trip type of rural tourism	Family: 16 (32.0%), Friends group: 24 (48.0%), Couple: 10 (20.0%)
Preferable price for one night per person	< €19: 2 (4.0%), €20~39: 30 (60.0%), €40~59: 16 (32.0%), >€60: 2 (4.0%)

Figure 2. The factorial design of the Q-set. *Source:* Google images labeled for reuse

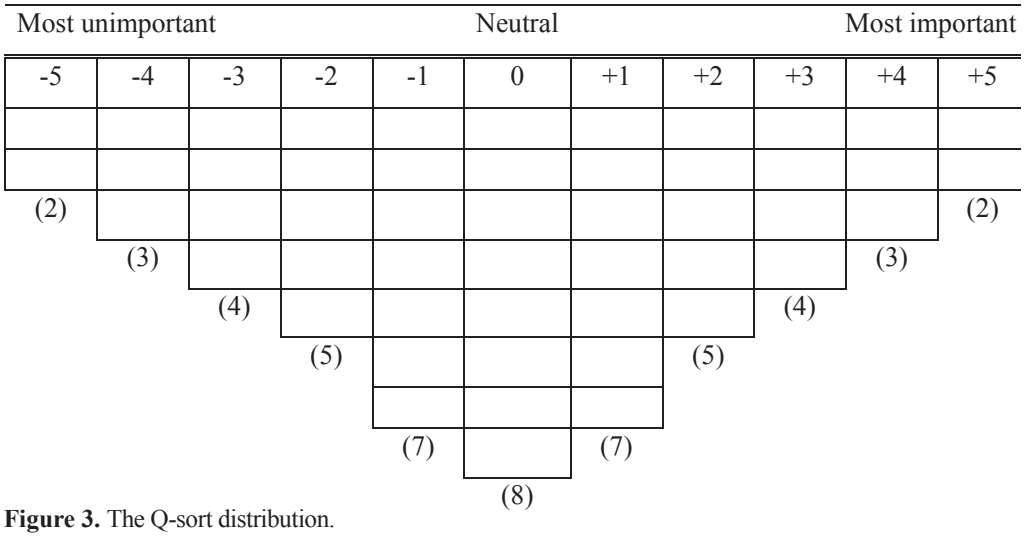

Figure 3. The Q-sort distribution.

deeper into the nature of influential factors and to understand the meaning of the critical attributes categorized by respondents (Fairweather & Swaffield, 2001).

The final step of visual Q is factor analysis. It is possible to create distinguishable groups of participants with Q-grids, which are meaningfully similar and meaningfully distinct (Davis & Michelle, 2011). This is a large point of difference from the R methodology, which is a correlation analysis among variables according to Previte *et al.* (2007). The factor loading means the degree of a Q-sort's relationship with a factor, is counted for every Q-sort (Van Exel & De Graaf, 2005). All participants with a similar viewpoint can be analyzed on the same factor since the pattern of their opinions that express their subjectivity is similar (Coogan & Herrington, 2011). A participant's high factor loading means that the association of this participant with the factor is high as well (Pereira *et al.,* 2016).

The Q method package that was developed for R programming, has been applied to the present study (Zabala, 2014). This package executes the principal component analysis (PCA) instead of the factor analysis from the Q methodology. PCA is already available for R methodology, and the results from both methodologies are similar (McKeown & Thomas, 2013). Varimax, which is the most commonly used, was applied for the rotation of components.

Results

Quantitative findings

It is not necessary to determine a mathematically correct solution or one single goal in deciding the number of factors included in the Q methodology. More important are clarity and simplicity (Cairns *et al.,* 2014). Factors were extracted by seeking the best way to maximize the percentage of the explained variance with the minimal number of factors and comparing the results through multiple tests (Cairns *et al.,* 2014). Thus, in this study, we composed three factors that, in total, explained 57% of the variance. In accordance with the result of this study, the participants who classified a set of image cards similarly were chosen to belong to the same factor (Table 2). The first factor formed 23% of the explained variance and consisted of 21 participants from the Q-sorts. The second factor formed 17% of the explained variance and was made up of thirteen participants from the Q-sorts. The third factor formed 17% of the explained variance and consisted of 11 participants from the Q-sorts. Five participants were not related to any factor since their factor loadings were not prominent enough in any factor to be classified as one factor (Table 3).

In order to identify the characteristics of each factor and the differences between the factors, it was necessary to examine the ranking of experiences indicated by the z-score, which is a weighted average of the values that the Q-sorts intimately connected with a factor assigned to an experience and the factor score (Zabala & Pascual, 2016). The interpretation of the factors was completed with priority given to the experiences of a factor that had a z-score above $|1.00|$ and distinguished from other factors (Table 4). For example, 'Cleanliness (2.076)', 'Comfort (1.463)', and 'Customer care (1.262)' were the most important experiences in rural tourism for the first factor. For the second factor, 'Nature (2.049)', 'Landscape (1.929)', and 'Mountain·Forest (1.296)' were the most important. For the third factor, the most important experiences were 'Nature (1.734)', 'Disconnection from the world (1.383)', and 'Rustic environment (1.342)'. Finally, 'Gastronomy', 'Rest', and 'Lots of cultural tourism' were common experiences with importance for all factors.

In addition, we conducted the bootstrapping Q for a more detailed interpretation of perspectives. The bootstrapping Q has the characteristic of measuring variability, such as the standard error (SE) of z-score and the bootstrap estimate for bias, which is the difference between the standard z-score and the bootstrapped z-score, through drawing and analyzing

Table 2. Q-sort factor loadings.

ID	F1	F2	F3
1	0.401	**0.623**	0.206
2	0.046	0.515	**0.540**
3	**0.501**	0.227	0.101
4	0.377	**0.701**	0.328
5	0.395	**0.579**	0.186
6	-0.001	0.348	**0.723**
7	0.523	0.289	0.547
8	0.205	**0.579**	0.503
9	**0.730**	0.077	0.299
10	**0.627**	0.032	0.237
11	**0.675**	0.020	0.272
12	0.284	0.395	**0.571**
13	0.152	0.350	**0.663**
14	0.341	0.209	**0.443**
15	**0.589**	0.257	0.368
16	-0.051	0.228	**0.613**
17	**0.565**	0.471	0.227
18	**0.713**	-0.001	0.395
19	0.338	0.021	**0.723**
20	0.200	0.161	**0.717**
21	**0.708**	0.404	0.362
22	**0.748**	0.134	0.345
23	**0.601**	0.006	0.600
24	**0.679**	0.278	-0.087
25	0.325	0.320	0.359
26	**0.613**	0.432	0.060
27	0.156	0.578	**0.634**
28	0.563	0.379	0.512
29	0.263	**0.606**	0.429
30	0.152	**0.688**	0.476
31	0.578	0.429	0.089
32	0.350	0.475	0.496
33	0.254	-0.030	**0.721**
34	**0.622**	0.084	0.425
35	**0.693**	0.320	0.193
36	0.372	0.593	0.257
37	-0.032	**0.824**	0.222
38	**0.551**	-0.012	0.476
39	0.103	**0.826**	0.131
40	**0.681**	-0.010	0.004
41	**0.787**	0.238	0.075
42	0.271	**0.523**	0.160
43	0.456	0.535	0.444
44	**0.596**	0.268	0.369
45	**0.691**	0.237	0.079
46	0.216	0.191	**0.670**
47	-0.232	0.573	0.143
48	**0.542**	0.323	0.423
49	0.390	**0.584**	-0.150
50	0.483	**0.566**	-0.015
% Expl. Var.	23.00 %	17.00 %	17.00 %

The bold numbers refer to the sorting of the corresponding factor. The IDs that do not contain any bold numbers indicate that the factor loadings are not distinguishing enough to correspond to any factor.

resamples out of the original sample with numerous iterations (Fig. 4). With the extracted variability, we can determine the reliability and stability of the participants' viewpoints and get more useful information for the interpretation (Zabala & Pascual, 2016). According to Zabala and Pascual (2016), the short length of the SE bar of an experience means that the experience position in the corresponding factor is stable. The overlap of the SE bars is interpreted to mean that both are indistinguishable. The case of the overlap of the SE bars indicates consensus experiences among the three factors. After all, experiences with the SE bar that does not overlap with the others at the same time as with the short length of the SE bar is highly distinguishing in a specific factor. For example, 'Coziness' in the first factor, 'Mountain·Forest' in the

Table 3. Q-sort for each factor.

Category	F1 - Active leisure seeker	F2 - Occasion driven visitor	F3 - Pleasure spender	Q-sort excluded	Total
Users	2,4,8,12,16,25,30	1,3,9,10,11,17,24		28	15
Experts	6,13,27,29	5,21,26	18,19,20,22,23	7,14,15	15
Total Q-sort	11	10	5	4	30

Table 4. Z-scores and factor scores for each experience.

Experiences	Z-scores			Factor scores		
	F1	F2	F3	F1	F2	F3
Accessibility	0.849	-0.031	-0.277	2	0	-1
Coziness	**1.168**	0.550	-0.213	**3**	1	-1
Customer care	**1.262**	0.310	0.198	**3**	1	1
Excursion	0.310	0.988	**1.196**	1	**3**	**3**
Low price	-0.381	0.604	-0.639	-1	1	-2
Barbecue	0.576	**-1.379**	-0.142	1	**-4**	0
Boat·Kayak	**-1.262**	0.118	-0.363	-3	0	-1
Farm	-0.924	**-1.330**	0.401	-2	-3	1
Bicycle	-0.504	-0.117	0.690	-1	0	1
Winery	0.092	**-1.240**	0.294	0	**-3**	1
Mountain·Forest	0.059	**1.296**	0.830	0	**4**	2
Value for money	**1.192**	0.978	0.625	3	3	1
Chimney	0.395	**-1.052**	0.001	1	-2	0
Comfort	**1.463**	0.168	-0.090	**4**	0	0
Rest	**1.353**	**1.156**	1.592	**4**	**3**	**5**
Disconnection from the world	0.616	0.528	1.383	1	1	**4**
Exterior design	-0.652	-0.284	-0.078	-1	-1	0
Interior design	-0.035	-0.330	-0.625	0	-1	-2
Space for children	0.548	-1.348	0.818	1	-4	2
Space for dogs	-0.732	-1.212	-0.074	-2	-3	0
Recreation area	0.063	-0.860	-0.543	0	-2	-2
Classic style	**-1.000**	**-1.503**	**-1.496**	**-3**	**-4**	-3
Modern style	**-1.091**	-0.873	**-1.559**	**-3**	-2	**-4**
Gastronomy	**1.665**	**1.983**	**1.475**	**5**	**5**	**4**
Tranquility of the establishment	0.972	0.969	0.975	2	**3**	2
Rustic environment	0.060	0.812	**1.342**	0	2	4
Garden	0.431	-0.419	-0.298	1	-1	-1
River·Lake	-0.397	0.938	0.820	-1	2	2
Cleanliness	**2.076**	0.641	0.329	**5**	1	1
Luxuriousness	**-1.277**	-0.894	**-1.653**	**-4**	-2	**-4**
Maintenance of facilities	**1.063**	0.237	-0.342	**3**	0	-1
Climbing·Hiking	-0.027	0.811	**1.127**	0	2	2
Horse riding	-0.937	-0.593	0.754	-2	-1	1
Nature	0.878	**2.049**	**1.734**	2	**5**	**5**
Observation of fauna and flora	-0.100	0.692	**1.151**	-1	2	**3**
Tennis	**-1.564**	**-1.650**	**-1.825**	**-4**	**-5**	**-5**
Landscape	0.624	**1.929**	**1.129**	2	**4**	3
Fishing	**-1.252**	**-1.056**	-0.073	-3	-2	0
Pool	-0.007	0.014	-0.440	0	0	-2
Beach	-0.659	0.892	**-1.768**	-2	2	**-4**
Privacy	0.776	0.308	-0.413	2	1	-1
Promotion	-0.010	-0.410	0.031	0	-1	0
Lots of cultural tourism	**1.419**	**1.271**	**1.135**	**4**	**4**	**3**
Spa	-0.749	-0.238	-0.338	-2	0	-1
Terrace	0.320	-0.443	-0.680	1	-1	-2
Sunbathing	-0.348	-0.245	**-1.468**	-1	-1	**-3**
Stargazing	-0.488	0.372	0.027	-1	1	0
Ski	**-2.092**	0.018	**-1.472**	**-5**	0	**-3**
Golf	**-1.809**	**-1.947**	**-2.030**	**-4**	**-5**	**-5**
Cable car	**-1.934**	**-1.175**	**-1.154**	**-5**	**-3**	**-3**

The bold numbers in z-scores refer to a weighted average above | 1.00 | among z-scores. The bold numbers in factor scores indicates a score above | 3 | among factor scores.

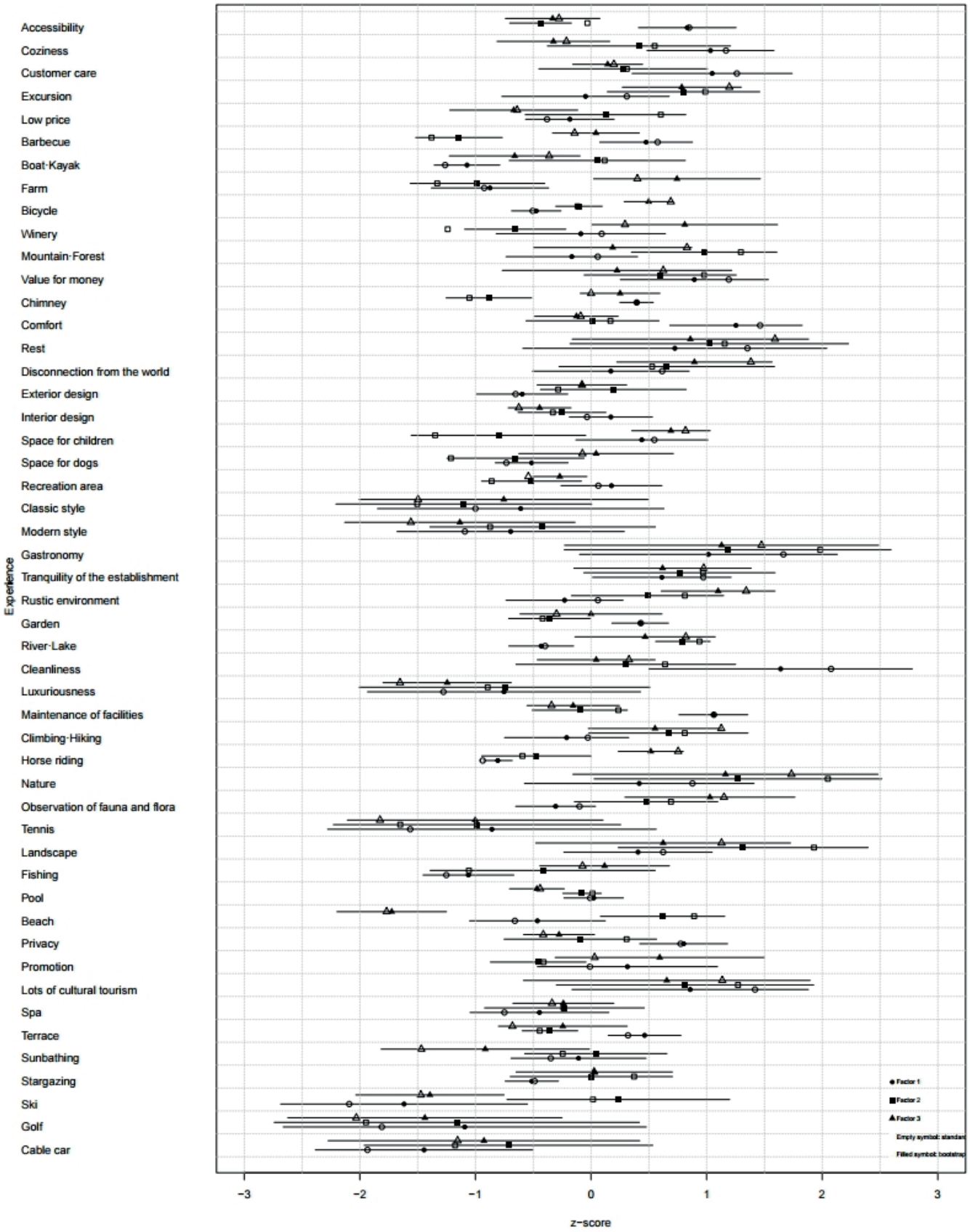

Figure 4. Standard z-score, bootstrap estimate and standard error (SE) for each experience.

second factor, and 'Rustic environment' in the third factor are the cases mentioned above. The characteristics of each factor were identified through an overall evaluation of factor score, standard z-score, bootstrapped z-score, and SE to the variability.

Factor 1: Occasion driven visitor

The first factor includes 21 participants: 10 customers and 11 experts in rural tourism. The experiences that participants from the first factor think are most important in rural tourism were: 'Cleanliness', 'Comfort', 'Maintenance of facilities', and 'Customer care' and the unimportant experiences in rural tourism for them were: 'Ski', 'Cable car', 'Luxuriousness', and 'Boat·Kayak' (Fig. 5). We named this type 'Occasion driven visitor'. In a word, the key benefit they pursue in rural tourism was 'Ambience'. The key characteristic of this factor was that they put a high value on the feelings and images offered by rural tourism accommodation facilities and pursue special experiences there. It was a factor that they thought that the convenience of use and services in rural tourism accommodation were the most important aspects, so they used the facilities in the rural tourism area rather than something outside it. They were less interested in outdoor activities than other factors. It seems that there was a tendency to use rural tourism mainly for special experiences on special occasions.

Factor 2: Active leisure seeker

Thirteen participants were included in the second factor: eight customers and five experts in rural tourism. The important experiences in rural tourism for the participants of the first factor were: 'Nature', 'Landscape', 'Mountain·Forest' and 'Excursion' (Fig. 6). The unimportant experiences in rural tourism for them were: 'Barbecue', 'Space for children', 'Farm', and 'Winery'. We named this type 'Active leisure seeker'. In a word, the key benefit these customers pursue in rural tourism was 'Activity'. This type of factor was characterized by the preference for being active in nature. They were interested in actively enjoying nature through various activities outdoors. The distance at which the rural tourism component was located was not important for them if they could spend sufficient time participating in the leisure activities that they sought. Because they think that activities in nature are important, they more carefully considered the natural environment that the particular rural tourism accommodation had in its surrounding area than what the quality of the facilities was when planning their trips. This factor also demonstrates less interest in activities inside the rural tourism accommodation and in tourist attractions in the rural surroundings than other factors.

Factor 3: Rural immersion pursuer

Eleven participants were included in the third factor: four customers and seven experts in rural tourism. The important experiences in rural tourism for the participants of the third factor were: 'Nature', 'Disconnection from the world', 'Rustic environment', and 'Observation of fauna and flora' (Fig. 7). The unimportant experiences in rural tourism for them were: 'Luxuriousness', 'Beach', 'Sunbathing', and 'Ski'. We named this type 'Rural immersion pursuer'. In a word, the key benefit they pursued in rural tourism was 'Disconnection'. This factor was characterized by its preference for being disconnected from the complicated city and completely breaking with their daily routine. They sought to escape from everyday stress and deeply heal by immersing themselves in the rural environment, which is very different from the city. This factor was less interested in participating in activities, as a means of enjoying the essence of the rural environment than the other factors.

Consensus experiences: A pleasant break

Among the consensus attributes, the important experiences that all factors had in common were: 'Gastronomy', 'Rest', 'Lots of cultural tourism', and 'Value for money' (Fig. 8). This means that the fundamental attribute that tourists expected from rural tourism was 'A pleasant break', which is characterized by the pursuit of eating something delicious at high-quality gastronomic sites, seeing a variety of things at cultural heritage sites, and feeling renewed at the rural tourism destination. It shows that a peculiar gastronomic experience and a cultural tourism experience were important parts of finding pleasure in rural tourism and value for money as a basis for choosing the rural tourism location. The unimportant experiences that these tourists agree upon were: 'Tennis', 'Golf', 'Classic style', and 'Modern style'. While rural tourism is an accommodation based service in a rural area, the classic or modern style of its facilities was not important for rural tourism tourists. Also, it shows that there was not a great desire to enjoy sports activities, that can be done near the city, in rural areas.

Qualitative findings

This study explored the tourists' consciousness and behavior in each segment in depth through a qualitative

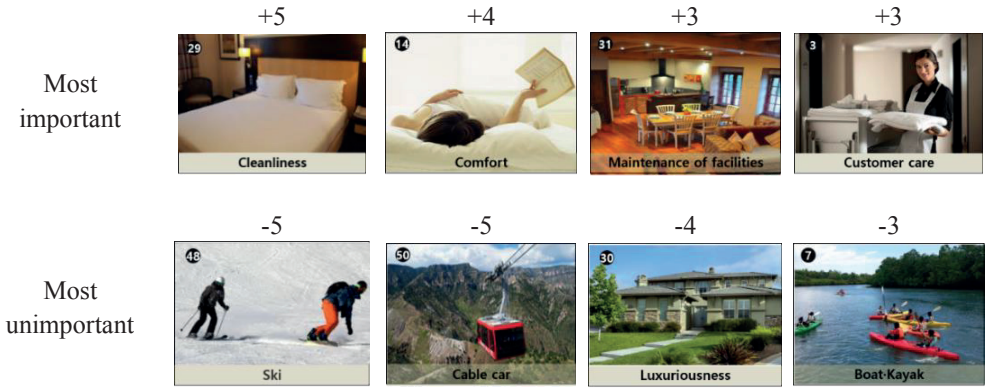

Figure 5. Distinguishing experiences in Factor 1

Figure 6. Distinguishing experiences in Factor 2

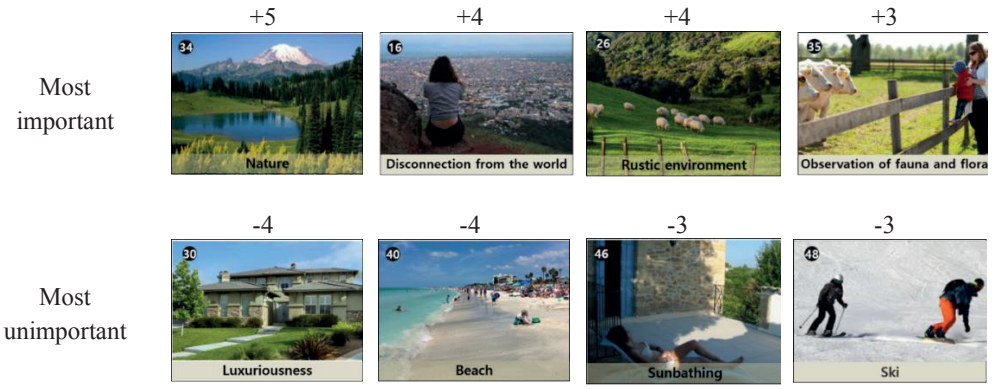

Figure 7. Distinguishing experiences in Factor 3

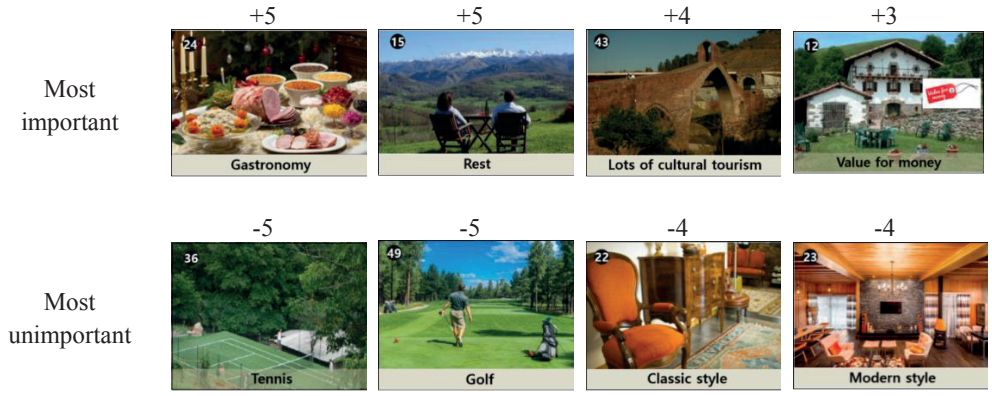

Figure 8. Consensus experiences

approach that asked respondents the reason why they chose important attributes in conjunction with the results of the quantitative survey.

Occasion driven visitor

Occasion driven visitors' comments on the key attributes in rural tourism choices were focused on rural tourism facilities. They tended to pursue special occasions through rural tourism, such as meeting with family, partying with friends, and intimate time with partners, using rural tourism facilities.

"I do rural tourism with my family and the families of my three younger brothers. The only place for four families to gather together seems to be rural tourism. It seems to be important to have a spacious place where the four families can stay together and to have the facilities to stay without inconvenience in choosing rural tourism."

"I normally enjoy rural tourism with my boyfriend. When choosing rural tourism, the most important thing is whether the accommodation has facilities for the comfort of the two of us. Above all, I wish the place to be clean and where privacy can be maintained."

"I often use rural tourism for gatherings with friends. In a word, rural tourism gives us a good place to gather and party together. Therefore, the surrounding environment is not important when choosing rural tourism. It is important to have comfortable facilities."

Active leisure seeker

Comments from the active leisure seekers showed that the purpose of rural tourism was to be active in the natural or rural environment. They were more likely to choose rural tourism, which provides the conditions for active activities such as tracking, hiking, walking, swimming and sports.

"I like to go trekking and hiking with my family because doing outdoor activities outside of the city can give us new vitality and relieve our stress from urban life. When choosing rural tourism, I first consider whether there are natural surroundings to go walking nearby."

"I like rural tourism because it provides a good environment for me to take my dog and play with him. When deciding on a rural destination, the most important consideration is whether I can take my dog and whether there is space around it for my dog to play."

"As I have children, it is important to have an environment and facilities to do activities with my family. I carefully consider whether there are well-equipped facilities for activities such as a swimming pool and table for table tennis, and the possibility of various outdoor activities such as horse riding and fishing."

Rural immersion pursuer

The comments of rural immersion pursuers on important factors in rural tourism choices are concentrated with a rural environment that is completely different from the city. They seek perfect breaks from busy city life, refreshment through rural landscapes, and new experiences that only rural communities can give.

"I am a person who is too busy and has a lot to care about. Since rural tourism is a great way to get out of the environment around me very easily, I sometimes enjoy it. If I rest well without doing anything special, it will be my best experience in rural tourism."

"I like rural tourism because it seems to make me feel refreshed when I look at the landscape in a place with great natural scenery. I consider not only whether there are nature and scenery, but also whether I can fully feel the atmosphere of rural areas."

"I often do rural tourism to give my children growing up in the city the chance to experience something new. If they can directly touch the soil, plants, animals, etc., and if they can do stargazing, I think it will be the best rural tourism for my family."

A pleasant break

Comments from respondents who belong to 'A pleasant break' show that it was a pleasure for them to concentrate on rural tourism. The pursuit of enjoyment such as eating delicious food, seeing various interesting things, and staying in rural tourism accommodations at reasonable prices was an important consideration in choosing rural tourism.

"The element that I consider important in rural tourism seems to be gastronomy. Eating something delicious with my family while doing rural tourism makes me feel pretty satisfied. It's important whether rural tourism accommodation is well-equipped with barbecue and cooking facilities, and whether there are famous restaurants nearby."

"I only do rural tourism for the purpose of accommodation during my trip. This is because rural tourism accommodation is cheaper and of higher quality. For me, rural tourism is just a place for sleeping like a hotel. Therefore, the quality of a room for the price charged for it is the most important factor for me."

"Since my hometown is rural, I am already so used to the rural environment. I don't have much interest if rural tourism means just resting in a rural atmosphere. There

must be something to do around the countryside and a lot of cultural heritage. I consider this a lot before going to do rural tourism."

Discussion

It is important to discover which tourist experiences in rural tourism tourists pursue in order to develop the various value propositions. In this research, we have derived three factors and consensus images on the experiences in rural tourism through the use of visual Q. We can describe tourist experiences in rural tourism in Spain with the result of the analysis (Fig. 9).

This investigation has added some meaning to the existing literature from theoretical and methodological perspectives. From a theoretical point of view, this study has made some contribution. Fernandes and Cruz (2016) analyzed the factors that affect tourism experiences such as functional benefits, service providers, entertainment, learning, trust and environment. They provided criteria for identifying the kinds of experiences existing within tourism by classifying the types of tourist experiences, whereas the present study is meaningful for explaining the types of markets that exist in rural tourism by presenting tourist types based on the experiences that tourists truly pursue in rural tourism. This result helps make it possible to understand the rural tourism markets based on tourist needs. Also, related to tourist experiences in rural tourism, Sharpley and Jepson (2011) conducted focus group interviews of the tourists who had visited the Lake District and discovered four kinds of experiences in rural tourism: remoteness, the spiritualness of place, solitude/quietness and altitude/the limitless. Since the results of that study were derived based on experiences limited to a specific rural tourism area, it is difficult to apply it to other rural tourism areas with different characteristics. Nonetheless, the results of our research can be applied to the rural tourism areas in various situations because it was surveyed tourists with varied experiences as well as experts in rural tourism. It can give rural tourism an opportunity to put forward various value propositions, thus escaping the monotonous value propositions that we currently observe.

From a methodological point of view, this investigation contributes to the existing studies in evaluating the visual Q methodology as a better way to extract tourist perceptions of experiences. It has enabled tourist opinions to emerge without being enforced by a researcher who has his/her own viewpoint drawn from previous hypotheses. Since the visual stimuli of the visual Q methodology led participants to provide a rapid and clear response, an effective exploration of individual subjectivity was possible. Visual Q made it possible to qualitatively analyze tourist experiences and quantitatively segment the rural tourism market based on tourist experiences. Likewise, the analysis of individual subjectivity allowed for in-depth interpretation of the results. In addition, this study combined quantitative analysis with Q methodology and

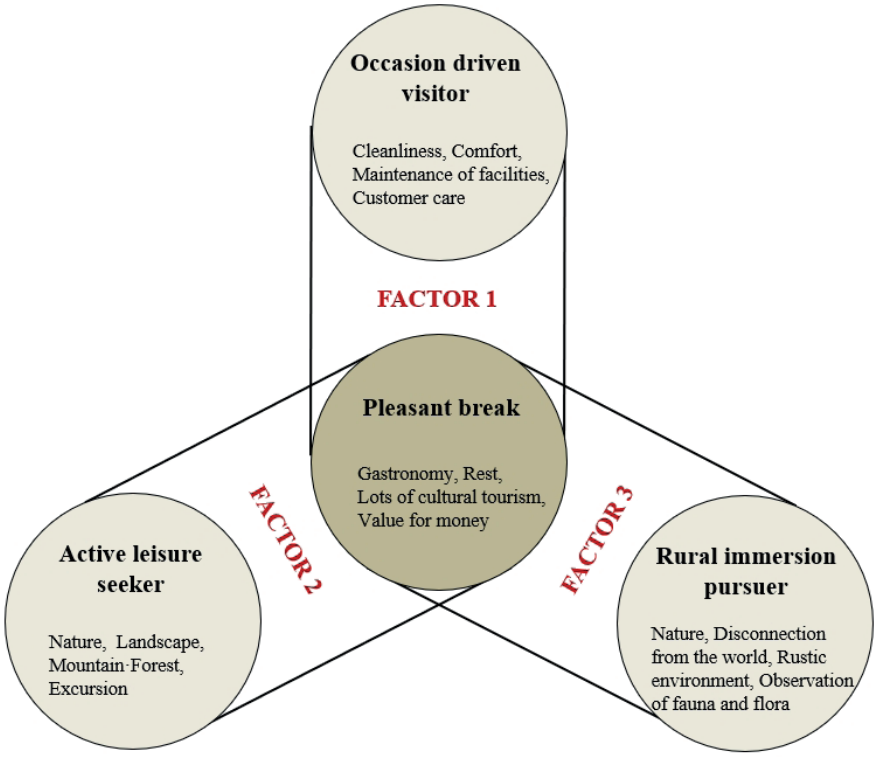

Figure 9. Description of rural tourism experiences.

qualitative analysis with questionnaires. This kind of a mixed-methods approach made it possible not only to identify what the important attributes in the choice of rural tourism are but also to understand the reason why tourists think so. This was a good way to draw holistic pictures of tourists' perceptions and behaviors.

The results of this study have many strategic implications for both local governments and rural tourism providers. First, at a local government level, it was found that tourists were pursuing various experiences in rural tourism in Spain and there were multiple markets implicated in this research. This means that the motivations for rural tourism are diverse and many ways of reaching rural tourism consumption exist. Local governments should employ the approach of localizing the region. They should develop specific strategies to meet the needs of market subdivisions, concentrating on a specific segment with relevance to their region. Based on these strategies, they should invest in marketing their regions as a distinctive rural tourism destination by creating rural tourism products that respond to the needs of a specific segment.

Second, at the rural tourism provider level, each rural tourism provider should evaluate the derived segment and select a market on which they should concentrate. They should decide their core target audience, carefully contemplating whether they have the ability to provide the appropriate experiences for the core target audience, while considering their surrounding environment. In addition, it is necessary to establish a positioning strategy that can meet the needs of rural tourism tourists, considering the characteristics of the core target audience. These positioning strategies should be used as criteria for developing all services and communicating with tourists. With these criteria, rural tourism providers can not only offer differentiated rural tourism experiences for tourists by developing services that are relevant to their positioning strategies but also communicate with tourists to inform them of the corresponding rural tourism in a consistent manner at all touch points.

However, this investigation has limitations: with only 50 respondents collected, it is difficult to obtain representativeness in terms of sociodemographic features (age, occupation, place of residence, trip type, price level, etc.). This is due to the fact that Visual Q is a semi-qualitative methodology whose ultimate goal is a qualitative assessment of the individual through a quantitative statistical analysis. It is possible to grasp the characteristics of the rural tourism market by quantitatively examining individual perceptions, which have a qualitative aspect, but it is impossible to generalize the demographic characteristics of the individuals through such a small sample. Thus, it is difficult to identify the more detailed characteristics of each segment through the current study.

According to Zabala (2014), the results of the Q methodology can be used as a point of departure for other quantitative methodologies and be applied conjointly with qualitative methodologies. Since this study basically served to confirm existing markets, it is still necessary to quantify the characteristics of each rural tourism market by carrying out additional quantitative research focusing on demographics. It will be possible to develop corresponding policies by determining the rural tourism market size and collecting detailed characteristics of the market. Also, based on the results of this visual Q study, we can thoroughly analyze the question of the optimal combination of tourist experiences that rural tourism can provide. In addition, Visual Q based on personal subjectivity can be widely applied to diverse tourism research in the future: hospitality, cruise tourism, ecotourism and wine tourism.

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References

Agapito D, Valle P, Mendes J, 2014. The sensory dimension of tourist experiences: Capturing meaningful sensory-informed themes in Southwest Portugal. Tour Manag 42: 224-237. https://doi.org/10.1016/j.tourman.2013.11.011

Amedeo D, Pitt DG, Zube EH, 1989. Landscape feature classification as a determinant of perceived scenic value. Landsc J 8: 36-50. https://doi.org/10.3368/lj.8.1.36

Azizian A, Watson TD, Parvaz MA, Squires NK, 2006. Time course of processes underlying picture and word evaluation: An event-related potential approach. Brain Topogr 18: 213-222. https://doi.org/10.1007/s10548-006-0270-9

Bacher K, Gordoa A, Mikkelsen E, 2014. Stakeholders' perceptions of marine fish farming in Catalonia (Spain): A Q-methodology approach. Aquaculture 424-425: 78-85. https://doi.org/10.1016/j.aquaculture.2013.12.028

Besteiro B, 2006, El turismo rural en Galicia. Análisis de su evolución en la última década. Cuad Tur 17: 25-49.

Blanco F, 1996. Fundamentos de la política comunitaria y española en materia de turismo rural. Estud Turísticos 131: 25-49.

Brown L, Osman H, 2017. The female tourist experience in Egypt as an Islamic destination. Ann Tour Res 63: 12-22. https://doi.org/10.1016/j.annals.2016.12.005

Cairns R, Sallu SM, Goodman S, 2014. Questioning calls to consensus in conservation: a Q study of conservation

discourses on Galápagos. Environ Conserv 41: 13-26. https://doi.org/10.1017/S0376892913000131
Campón-Cerro AM, Hernández-Mogollón JM, Alves H, 2017. Sustainable improvement of competitiveness in rural tourism destinations: The quest for tourist loyalty in Spain. J Destin Mark Manag 6: 252-266. https://doi.org/10.1016/j.jdmm.2016.04.005
Choo H, Petrick JF, 2014. Social interactions and intentions to revisit for agritourism service encounters. Tour Manag 40: 372-381. https://doi.org/10.1016/j.tourman.2013.07.011
Coogan J, Herrington N, 2011. Q methodology: an overview. Res Second Teach Educ 1: 24-28.
Correia Loureiro SM, Miranda González FJ, 2006. Calidad, satisfacción y fidelidad en el turismo rural: Un análisis hispano-portugués. Pap Tur 0: 49-66.
Daniel TC, 2001. Whither scenic beauty? Visual landscape quality assessment in the 21st century. Landsc Urban Plan 54: 267-281. https://doi.org/10.1016/S0169-2046(01)00141-4
Davis CH, Michelle C, 2011. Q methodology in audience research: bridging the qualitative/quantitative 'divide'? J Audience Recept Stud 8: 559-593.
Van Exel J, De Graaf G, 2005. Q methodology: a sneak preview. Soc Sci 2: 1-30. https://doi.org/10.1021/cenv083n024.p002
Fairweather JR, Swaffield SR, 2001. Visitor experiences of Kaikoura, New Zealand: an interpretative study using photographs of landscapes and Q method. Tour Manag 22: 219-228. https://doi.org/10.1016/S0261-5177(00)00061-3
Fernandes T, Cruz M, 2016. Dimensions and outcomes of experience quality in tourism: the case of Port wine cellars. J Retail Consum Serv 31: 371-379. https://doi.org/10.1016/j.jretconser.2016.05.002
Figueiredo E, Raschi A, 2012. Immersed in green? Reconfiguring the Italian countryside through rural tourism promotional materials. Adv Cult Tour Hosp Res 6: 17-44. https://doi.org/10.1108/S1871-3173(2012)0000006005
Frochot I, 2005. A benefit segmentation of tourists in rural areas: a Schottish perspective. Tour Manag 26: 335-346. https://doi.org/10.1016/j.tourman.2003.11.016
García JL, 1996. El turismo rural como factor diversificador de rentas en la tradicional economía agraria. Estud Turísticos 132: 45-60.
Garrod B, Wornell R, Youell R, 2006. Re-conceptualising rural resources as countryside capital: The case of rural tourism. J Rural Stud 22: 117-128. https://doi.org/10.1016/j.jrurstud.2005.08.001
Gentile C, Spiller N, Noci G, 2007. How to sustain the customer experience:. An overview of experience components that co-create value with the customer. Eur Manag J 25: 395-410. https://doi.org/10.1016/j.emj.2007.08.005
Grande J, Maynar M, 2010. Hacia un nuevo modelo de turismo rural. CONAMA 2010. http://www.sepinum.com/articulos/hacia-un-nuevo-modelo-de-turismo-rural
Hardy A, Pearson LJ, 2018. Examining stakeholder group specificity: An innovative sustainable tourism approach. J Destin Mark Manag 8: 247-258. https://doi.org/10.1016/j.jdmm.2017.05.001
INE, 2017. Yearly number of tourists staying in rural accommodations in Spain between 2006 and 2016. Instituto Nacional de Estadística, Spain.
INE, 2018. Encuesta de ocupación en alojamientos turísticos. Instituto Nacional de Estadística, Spain.
Kastenholz E, João Carneiro M, Peixeira Marques C, Lima J, 2012. Understanding and managing the rural tourism experience - The case of a historical village in Portugal. Tour Manag Perspect 4: 207-214. https://doi.org/10.1016/j.tmp.2012.08.009
Kastenholz E, João Carneiro M, Eusébio C, 2015. Diverse socializing patterns in rural tourist experiences-a segmentation analysis. Curr Issues Tour 21: 401-421. https://doi.org/10.1080/13683500.2015.1087477
Kastenholz E, João Carneiro M, Peixeira Marques C, Correia Loureiro SM, 2018. The dimensions of rural tourism experience: impacts on arousal, memory, and satisfaction. J Travel Tour Mark 35: 189-201. https://doi.org/10.1080/10548408.2017.1350617
Kiefer M, Pulvermüller F, 2012. Conceptual representations in mind and brain: theoretical developments, current evidence and future directions. Cortex 48: 805-825. https://doi.org/10.1016/j.cortex.2011.04.006
Kline CS, Greenwood JB, Swanson J, Cárdenas D, 2014. Paddler market segments: Expanding experience use history segmentation. J Destin Mark Manag 2: 228-240. https://doi.org/10.1016/j.jdmm.2013.10.004
Kozinets RV, 2002. The field behind the screen: using netnography for marketing research in online communities. J Mark Res 39: 61-72. https://doi.org/10.1509/jmkr.39.1.61.18935
Kozinets RV, 2015. Netnography: Redefined, 2nd ed. SAGE Publ. https://doi.org/10.1002/9781405165518.wbeos0782
Lane B, 1994. Sustainable rural tourism strategies: A tool for development and conservation. J Sustain Tour 2: 102-111. https://doi.org/10.1080/09669589409510687
Lane B, 2009. Rural tourism: An overview. SAGE Publ.
McKeown B, 1998. Circles: Q methodology and hermeneutical science. Operant Subj 21: 112-138.
McKeown B, Thomas DB, 2013. Q Methodology, 2nd ed. SAGE Publ. https://doi.org/10.4135/9781483384412
Naspetti S, Mandolesi S, Zanoli R, 2014. Innovation acceptability in dairy supply chain: a Q methodology analysis. Econ Agro-alimentare 2: 79-95. https://doi.org/10.3280/ECAG2014-002005

Naspetti S, Mandolesi S, Zanoli R, 2016. Using visual Q sorting to determine the impact of photovoltaic applications on the landscape. Land Use Policy 57: 564-573. https://doi.org/10.1016/j.landusepol.2016.06.021

Neuhofer B, 2016. An exploration of the technology enhanced tourist experience. Eur J Tour Res 12: 220-223.

Otto JE, Ritchie JRB, 1996. The service experience in tourism. Tour Manag 17: 165-174. https://doi.org/10.1016/0261-5177(96)00003-9

Pelegrín J, González-Menorca C, Meraz L, 2019. The influence of the emotions produced by the wine offer, winery visits, and wine news on wine purchase intent in tourists. Span J Agric Res 17: e0104. https://doi.org/10.5424/sjar/2019171-13524

Pereira MA, Fairweather JR, Woodford KB, Nuthall PL, 2016. Assessing the diversity of values and goals amongst Brazilian commercial-scale progressive beef farmers using Q-methodology. Agric Syst 144: 1-8. https://doi.org/10.1016/j.agsy.2016.01.004

Previte J, Pini B, Haslam-Mckenzie F, 2007. Q methodology and rural research. Sociol Ruralis 47: 135-147. https://doi.org/10.1111/j.1467-9523.2007.00433.x

Quinlan Cutler S, Doherty S, Carmichael B, 2018. The experience sampling method: examining its use and potential in tourist experience research. Curr Issues Tour 21: 1052-1074. https://doi.org/10.1080/13683500.2015.1131670

Ramlo SE, Newman I, 2011. Q methodology and its position in the mixed-methods continuum. Operant Subj 34: 172-191.

Schlochtermeier LH, Kuchinke L, Pehrs C, Urton K, Kappelhoff H, Jacobs AM, 2013. Emotional picture and word processing: an fMRI study on effects of stimulus complexity. PLoS One 8 (2): e55619. https://doi.org/10.1371/journal.pone.0055619

Sharpley R, Jepson D, 2011. Rural tourism: A spiritual experience? Ann Tour Res 38: 52-71. https://doi.org/10.1016/j.annals.2010.05.002

Sims R, 2009. Food, place and authenticity: Local food and the sustainable tourism experience. J Sustain Tour 17: 321-336. https://doi.org/10.1080/09669580802359293

Swaffield SR, Fairweather JR, 1996. Investigation of attitudes towards the effects of land use change using image editing and Q sort method. Landsc Urban Plan 35: 213-230. https://doi.org/10.1016/S0169-2046(96)00320-9

Uriely N, 2005. The tourist experience: Conceptual developments. Ann Tour Res 32: 199-216. https://doi.org/10.1016/j.annals.2004.07.008

Watts S, Stenner P, 2012. Doing Q methodological research: theory, method & interpretation. SAGE Publ. https://doi.org/10.4135/9781446251911

Woods M, 2003. Conflicting environmental visions of the rural: Windfarm development in mid Wales. Sociol Ruralis 43: 271-288. https://doi.org/10.1111/1467-9523.00245

Yagüe RM, 2002. Rural tourism in Spain. Ann Tour Res 29: 1101-1110. https://doi.org/10.1016/S0160-7383(02)00025-7

Zabala A, 2014. Q method: a package to explore human perspectives using Q methodology. R J 6: 163-173. https://doi.org/10.32614/RJ-2014-032

Zabala A, Pascual U, 2016. Bootstrapping Q methodology to improve the understanding of human perspectives. PLoS One 11 (2): e0148087. https://doi.org/10.1371/journal.pone.0148087

Zube EH, Pitt DG, Anderson TW, 1975. Perception and prediction of scenic resource values of the Northeast: Values, perceptions and resources. In: Landscape assessment: Values, perceptions and resources; Zube EH, Brush RO & Fabos JF (Eds.), pp: 151-167. Dowden, Hutchinson & Ross.

Zube EH, Pitt DG, 1981. Gross-cultural perceptions of scenic and heritage. Landsc Plan 8: 69-87. https://doi.org/10.1016/0304-3924(81)90041-1