Cognitive value of tourism resources and their relationship with accessibility: A case of Noto region, Japan.

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Abstract: We analysed cognitive values of the local residents by examining the correlation of the cognitive value and distances from the place of residence by respondents. The results are from the local residents who are frequently the main stakeholders for resource managements. The research site is Noto region in Ishikawa, Japan. We identified that tourism resources can be grouped into three categories: (i) the values of resources distributed along quadratic functions (U curve), (ii) those that decreased along negative linear functions, and (iii) those that did not have clear linear or nonlinear relationships between accessibility and their values. Moreover, impressions by residents in verbal terms were examined whether these impressions had correlation with the tourism resources. The typology and their linkage to impressions by residents in quantitative approaches provide us with unique perspectives for sustainable tourism management and destination management by combining of the different tourism resources.

Keywords: accessibility; cognitive value; accurate distance; tourism resources; resident attitudes; GIS; Noto; Japan.

1. Introduction

Do tourists value a destination regardless of how far away it is? If distance is a factor, then to what extent does the type of resource in question (for example, a landscape, historical site, or hot spring) matter? Tourism involves a variety of different types of resources. There are landscape and food resources, which are regarded as ecosystem services, and traditional or modern festivals as well as historical sites and museums, which are valued as cultural resources.

The questions above are critical for resource managers and policy makers alike, given that tourism is an industry that influences the socio-economic and environmental aspects of communities and wider regions (Lucchetti and Arcese, 2014). Tourism has a diverse range of impacts on a variety of resources. Each resource type, such as landscapes or historical sites, has a different spatial scale, different characteristics, and a unique location. One crucial aspect of a site's spatial characteristics is its accessibility. To provide adequate input for resource managers and policy makers, it is necessary to explore appropriate ways to manage each tourism resource, starting with distance and accessibility. To identify the most effective methods, it is necessary to explore the distances and values associated with tourism resources.

In the field of tourist decision-making, previous research indicates that accessibility in terms of physical distance is a primary quantitative indicator (Sirakaya and Woodside, 2005). When tourists choose travel destinations, they are influenced both by measurable distance (and accessibility) and also by cognitive distance (Ankomah et al., 1996; Massara & Severino, 2013). The importance of accurate or measurable distance is considered in the theory of tourist decision-making, where the focus is largely on the psychology or experience of tourists.

Dong et al. (2011) have shown that there is a correlation between distance and willingness to pay (WTP) in relation to natural heritage sites, based on the contingent valuation method (CVM). Yang et al. (2010) and Huang et al. (2012) have analyzed relationships between distance and the number of tourists at world heritage sites, and have pointed out that there is a negative correlation between distance and the number of tourists at a particular site. They regard travel cost as one cause of this negative correlation. Andriotis (2011) has grouped destinations into three categories: coastline, urban, and rural areas. He suggests that the number of tourists at each destination is

related to their geographic origin. The measurable distance influences not only a tourist's assessment of resources and choice of destination, but also the activities he or she engages in at the tourist destination. Market segmentation can therefore be based on travel distance, which leads tourists to engage in different activities at the destination (Nyaupane and Graefe, 2008).

In past studies of tourism resources, whether involving historical sites or landscapes, the cognitive values of visitors are frequently overlooked and remain unexamined. The term "cognitive values" has been used by Grace Chen et al. (2009), and defined as "values that are subjectively assigned by customers."

The earlier studies summarized above have not focused on differing cognitive values and their relationship to accessibility—or, in other words, on visitors' subjective values and their relationship with the distance between resident and destination. For example, linear and non-linear correlations between cognitive values and distance have never been examined in detail. To identify the different cognitive values assigned to different tourism resources, based on distance, it is necessary to identify the influence of distance on the awareness and behavior of visitors. This is especially important in the field of sustainable tourism management. Identifying cognitive values that relate to the distance between a visitor's residence and his or her destination could enable tourism providers to develop investments and management plans across administrative municipality boundaries.

In related academic fields, researchers have discussed the non-linear relationships between the distance and values of ecosystem services, for example, to determine the suitability of farms located in a particular area for a brand of agricultural products (Carrasco et al., 2014; Fujita, 2006). When it comes to the geographical characteristics of tourism resources, tourists' preferences for different landscapes are

examined in relation to environmental management (Aranzabal et al., 2009). Accessibility is considered when evaluating the tourism potential of an area, alongside land use distribution (van der Merwe and van Niekerk, 2013; van der Merwe et al., 2013). The importance of accessibility is given the same weight when evaluating different types of tourism resources. However, the relationship between accessibility and tourism potential may differ from one type of tourism resource to another.

Understanding the relationship between distance and the cognitive values of tourism resources can help local municipalities and related tourism management organizations develop better strategies for investment and publicity. Such knowledge can serve sustainable tourism by decreasing the environmental impact of transportation through effective management (Larsen and Guiver, 2013). An appropriate means of transportation should be selected in accordance with the purpose and distance of travel. Moreover, identifying the relationship between distance and the value of tourism resources is important when exploring opportunities for collaboration among stakeholders, including local municipalities, companies, and residents. Investigating distance will help us to understand the area of influence around a tourism site, allowing regions to synergistically manage their tourism resources. For example, in landscape research, the names and visual images of resources, as well as any interactions between visitors and resources, are considered important factors that influence the cognitive values of the resources (Zube et al., 1982; Steen Jacobsen, 2007; Zhang, 2015). To provide a basis for local stakeholders' spatial and regional management, we particularly focus on accessibility, which depends on the spatial characteristics of tourism resources.

Herein, we analyze the cognitive values of tourism resources within different distances, based on a survey carried out in the Noto region of Japan. In addition, we identify the relationship between the types of tourism resources and residents' stated

impressions of the Noto region, suggesting which impression to consider to enhance the attractiveness of each tourism resource in the region.

2. Method

2.1. The cognitive value of tourism resources and impressions of the Noto region

Our survey respondents were residents of the nine municipalities of the Noto region in Ishikawa, a prefecture in central north part of Japan. Residents come from Hakui city, Hodashimizu town, Shika town, Nanao city, Noto town, Nakanoto town, Wajima city, Suzu city, and Anamizu town. Understanding the cognitive values of local residents and their relationship to distance is essential when exploring opportunities for collaborative work beyond or within boundaries, such as administrative units and jurisdictions. Local residents are frequently actors at the grass roots level, when it comes to conserving and using tourism resources. We therefore use the cognitive values of local residents as key information for sustainable tourism resource management at the local level. The distribution of the 176 respondents who listed their place of residence is shown in Figure 1. Based on the results of this questionnaire, we analyzed the relationship between the cognitive values respondents assigned to particular tourism resources and the distance from each respondent's residence to each tourism resource.

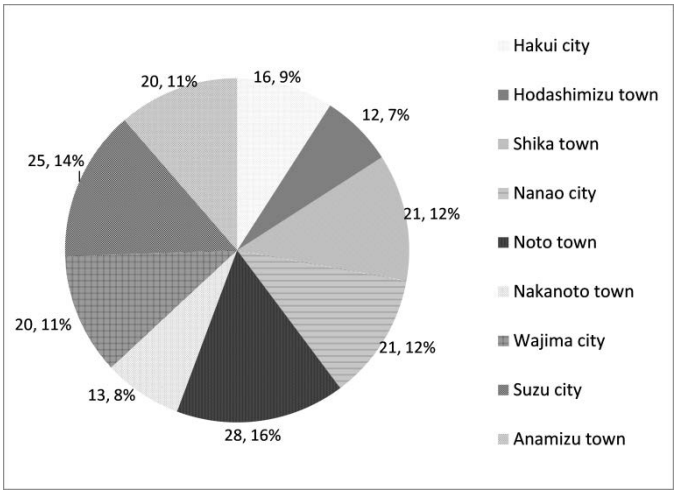

Figure 1. Number of respondents in each municipality（N=176）

The questions are shown below. In Q1, respondents were asked to specify a degree of recommendation for each tourism resource in the list (Table.1). The “degree of recommendation” refers to the individual’s level of willingness to recommend certain resources to tourists and others. The questionnaire lists 33 typical tourism resources, and the degree of recommendation is evaluated on a five-point Likert scale.

Q1. Please evaluate each tourism resource on a five-point Likert scale.

A1. 5. Agree; 4. Somewhat agree; 3. Neither agree nor disagree; 2. Somewhat disagree; 1. Disagree

To analyze the relationship between the cognitive values people assign to tourism resources and their impressions of the Noto region, we have used the results of Q2 in addition to Q1. The impressions shown in Table 2 constitute the expected characteristics (i.e., nature, food, traditional crafts, etc.) of the Noto region, which provide a context for the relationship between cognitive value and distance. The purpose of this analysis is to explore those impressions. The Q2 questions are shown in Table 2; these have been extrapolated from the official tourism literature produced by Ishikawa Prefecture.

Table 1. Tourism resources

Type	Name
Landscapes (9)	Road along Chiri Beach
	Ganmon (huge rock)
	Rice field at Shiroyone
	Yase cliff
	Tsukumo Bay
	Village of Syunran
	Bridge to Noto Island
	Mitsuke Island
	Lighthouse at Rokkosaki
Historical sites and Museums (12)	Ketataisha Shrine
	Aqua Museum on Noto Island
	Kami/Shimo Tokikunike (traditional houses)
	Glass factory at Noto island
	Sozizisoin Temple
	Cosmo Isle Hakui (Space Museum)
	Wazhima Lacquer Art Museum
	Ruins of Nanao castle

Type	Name
Historical sites and Museums (12)	Kita traditional house
	Hironobu Tsujiguchi Museum
	Gou Nagai memorial Museum
	Jomon Mawaki ruin
Food (6)	Local food market in Noto
	Morning bazaar in Wazima
	Oyster festivals: (Jumbo Oyster Festival in the Snow, and Noto Oyster Festival) in Nanao bay
	Salt-field village in Suzu
	Sake brewery
	Noto wine factory
Festivals (3)	Hakusei Festival
	Issakihoutou Festival
	Noto Kiriko Festival: Wazima Festival, Abare Festival
Hot springs (3)	Wakura hot spring
	Wazima hot spring village
	Hyokkori hot spring

Table 2. Respondents' degree of consent (level of agreement with general impressions of the Noto region)

	5. Agree	4. Somewhat agree	3. Neither agree nor disagree	2. Somewhat disagree	1. Disagree
1. Abundant nature and beautiful landscape	5	4	3	2	1
2. Delicious food	5	4	3	2	1
3. Unique culture and lifestyle	5	4	3	2	1
4. Comfortable place, offering peace of mind	5	4	3	2	1
5. Traditional crafts and skilled workers	5	4	3	2	1
6. Leisure activities with family, friends, or a partner	5	4	3	2	1
7. Warm and friendly people	5	4	3	2	1
8. Good place to set or shoot a movie	5	4	3	2	1
9. Far away from a major city	5	4	3	2	1
10. A modest and reserved place	5	4	3	2	1
11. Fashionable venues for eating and drinking	5	4	3	2	1

2.2. Distance between a respondent's residence and the tourism resource

First, residents were asked which municipality they lived in. We then measured the distance between a representative point in each municipality (for example, the city center or town hall) to each tourism resource. In calculating travel distance, we did not simply measure the distance in straight lines, but the travel route along local and national roads.

3. Analysis

We then analyzed the relationship between cognitive values and distance based on the results of Q.1. In this analysis, we examined the linear or non-linear relationship between them, and identified a linear or quadratic function to fit each relationship. Next, we analyzed the relationship between cognitive values and impressions of the Noto region based on the results of Q.1 and Q.2 by applying multiple regressions. The results of Q.1 were regarded as dependent variables and the results of Q.2 as independent variables.

3.1. Categorization of tourism resources

We grouped the 33 tourism resources into 5 categories (Table 1). Figure 2 shows the spatial distribution of those resources. The 5 categories were as follows: 1. Landscapes; 2. Historical sites and museums; 3. Food; 4. Festivals; and 5. Hot springs. Landscapes and Food are generally considered to be important factors in nature-based tourism (Tyrväinen, 2014). The Noto region is a Globally Important Agricultural Heritage Systems (GIAHS) site. GIAHS is part of the United Nations Food and Agriculture Organization (FAO) framework; this region was awarded GIAHS status in recognition of the unique socio-ecological landscape of Satoyama-Satoumi. In Satoyama-Satoumi, landscapes and food are the main tourism resources. In addition, historical sites and museums distributed throughout the region are important attractions, which showcase the identity of each area. In the Noto region, each town or village has its own traditional festival; the inhabitants of each town and village gather together during festival seasons. Hot springs are multiplex resources that involve landscape, food and other attractions; some are famous throughout Japan

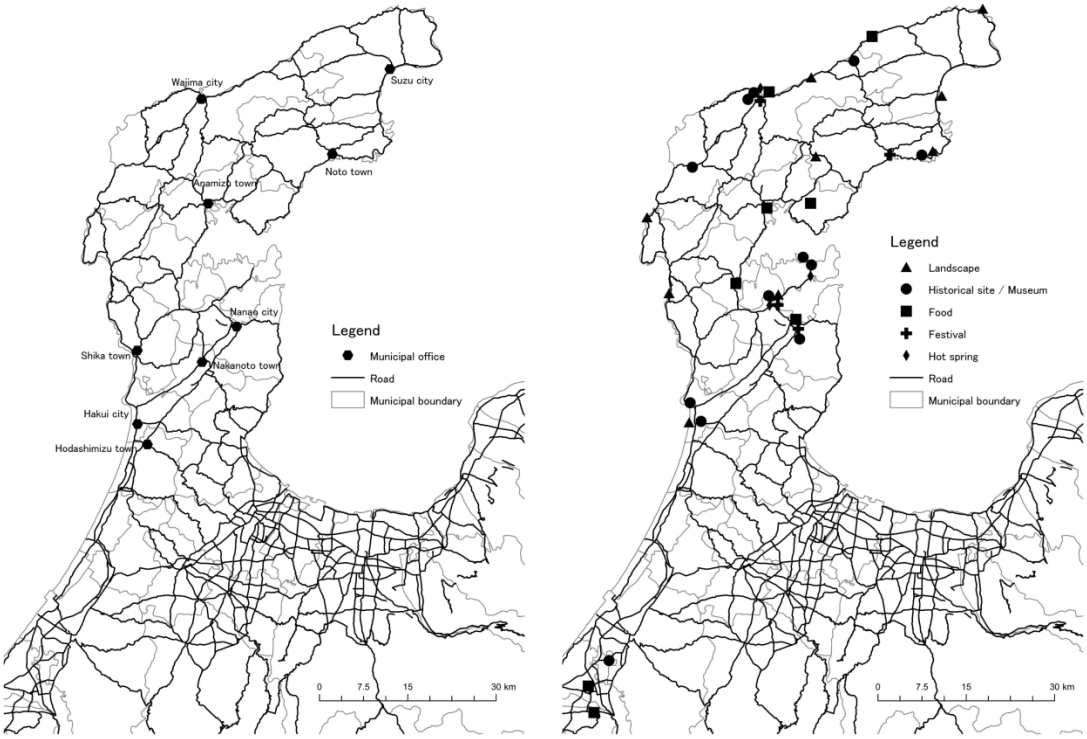

Figure 2. The distribution of tourism resources and the municipalities in which respondents live

4. Results

4.1. The cognitive values of tourism resources in each range of distances

This section explains the results of our analysis of the average values assigned to tourism resources at each distance range. We found the linear and quadratic function that best fit the distribution of values at each range of distances, and then analyzed the relationship between the values and distances, using a function with a higher adjusted R^2 and statistically significant coefficients.

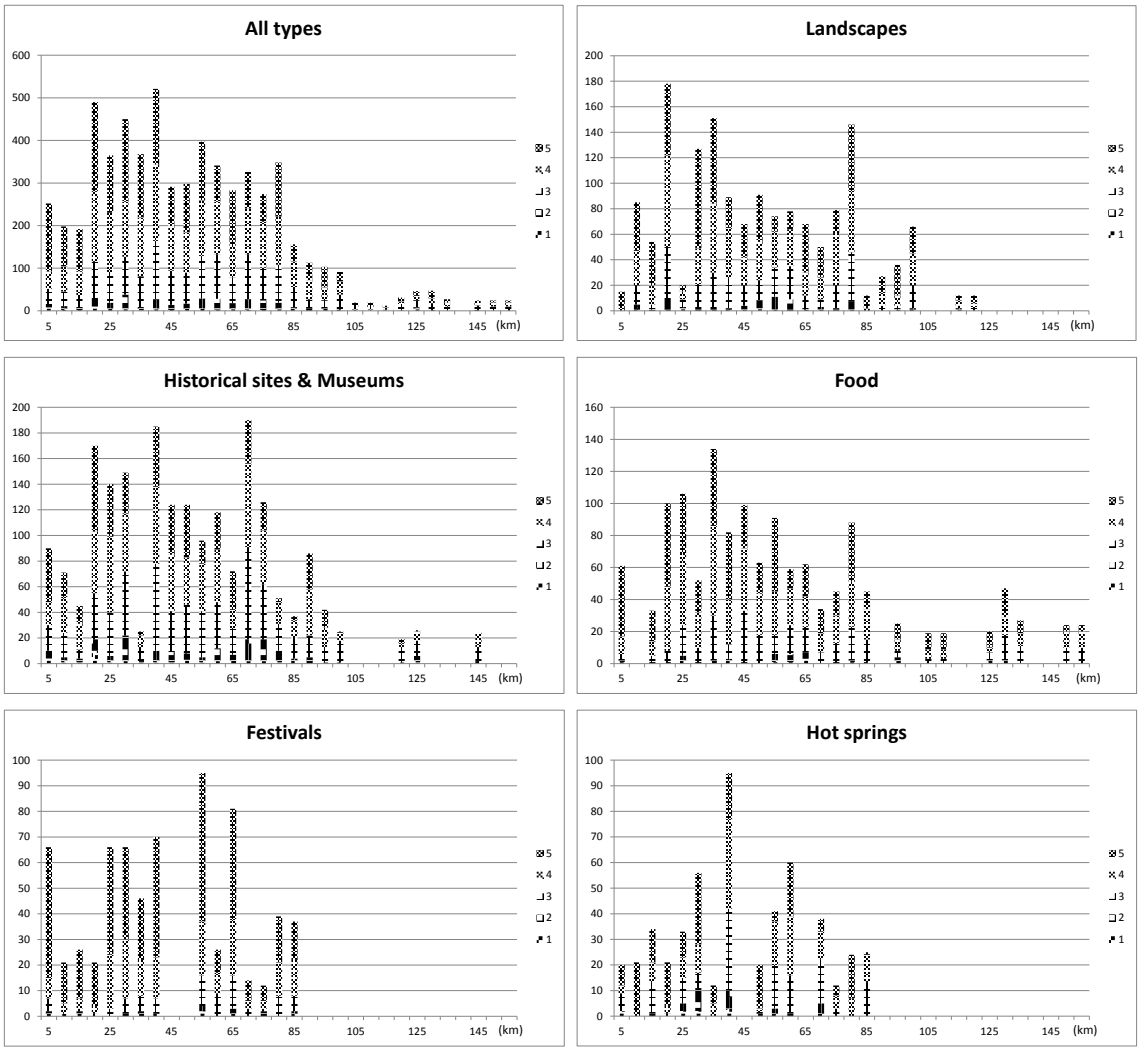

Figure 3. The number of responses for each cognitive value and range of distances (including all types of resource, landscapes, historical sites and museums, food, festivals and hot springs)

Table 3. The regression results for tourism resources of all types and for each type of tourism resource

	Coefficient		Intercept	R^2	p-value
	x^2	x			
All types	0.00009**	-0.0126***	4.3367*	0.487	0.001
Landscapes	0.0003**	-0.0257**	4.6067***	0.162	0.087
Historical sites and museums	-	-0.0035*	3.9069***	0.130	0.066
Food	0.0001	-0.0164**	4.5692***	0.477	0.004
Festivals	-	-0.0065***	4.6665***	0.629	0.002
Hot springs	-	-0.0047	4.2823***	0.057	0.703

*shows the statistical significance (p-value) of the coefficients and intercepts; *($p<0.1$), **($p<0.05$), ***($p<0.01$).

4.1.1. All types

We used data on the cognitive values of respondents whose distance from a resource was less than 100 km to examine the linear and non-linear relationship between the values and distances, because few data existed on distance ranges greater than 100 km. Until a distance of approximately 60 km, the occurrence of the highest value (5) decreases for each distance range. However, that trend does not continue for distances of more than 60 km—at that range, average values do not obviously decrease. For this reason, a quadratic function fits this distribution of average values ($p<0.01$). Coefficients of the quadratic function were significant ($p<0.05$). The average values assigned to neighboring resources were relatively high, and a quadratic function could fit the distribution of values. Respondents did not assign higher values, such as those

assigned to neighboring resources, to very distant resources.

Relatively distant resources did not receive many negative responses (values 1 and 2). This pattern may suggest that respondents were less interested in very distant resources, and could not make a clear-cut decision about them. When values were distributed along a quadratic function curve, the average values of very distant resources, situated more than 100 km from the respondents, could be high as the values assigned to neighboring resources.

4.1.2. Landscapes

In studying the evaluation of landscapes, we identified the trend showing that average cognitive values assigned to relatively distant resources were not lower than those assigned to nearby resources. The trend is similar to an overall trend found in the analysis of all types of resources. No linear functions fit the distribution values for landscapes. A quadratic function fit ($p<0.1$) and its coefficients were significant ($p<0.05$).

Nearby resources and those situated more than 80 km away from respondents had similarly high values. The adjusted R^2 of the function was not high, but the trend whereby very distant resources were assigned a relatively high value was more obvious than the overall trend.

Landscapes follow this trend because they constitute a differentiated resource; in other words, it is difficult to formulate a similar resource. If a resource is not differentiated, respondents may assign greater value to another resource with higher accessibility. On the other hand, if a resource is differentiated and located in a remote place, it can have a high cognitive value despite higher travel costs.

In evaluating landscapes as a resource, we observed that landscapes that fell between neighboring municipalities and very distant places had relatively low values. Some respondents might have been influenced by a competitive relationship between local resources in their own municipalities and those in surrounding municipalities. As a result, they may tend to prefer local resources to those in surrounding municipalities. The low values assigned to resources located between local and surrounding areas may reflect this attitude. Further research is needed to examine the feelings of respondents.

4.1.3. Historical sites and museums

Although a linear function could fit the distribution of values ($p<0.1$), the adjusted R^2 of the function was relatively low. Historical sites and museums provide cultural knowledge; strictly speaking, it is difficult to appreciate such resources without visiting them. However, the content of specific resources in very distant places can be understood, as they often provide visual information on a smaller scale than the landscape resources. Resources with smaller spatial scales, which depend on visual information, can also be experienced through books, magazines, the Internet and other media to a certain degree. For this reason, it may be difficult for very distant resources to achieve a high value, despite their location.

These different kinds of resources may be hard to differentiate because respondents need some time to appreciate the uniqueness of each resource. Without this, respondents cannot fully appreciate the uniqueness of each resource, but can only express a general preference for the type of resource, historical site, or museum.

4.1.4. Food

In considering the value of food-related resources in very distant places, we found that values were relatively high, despite travel costs. A quadratic function fit the distribution of values ($p<0.01$). However, the coefficient of X was significant ($p<0.05$) while that of X^2 was not significant ($p=0.103$). To enhance the value of food-related resources located in distant places, it was necessary to differentiate them by means of their unique regional and socio-ecological environments. Food resources, including local markets, can be appreciated in various ways. An important part of the travel experience, for example, is not just the opportunity to taste local foods, but also to meet and communicate with local people and other tourists.

4.1.5. Festivals

When it comes to festival-related tourism resources, spiritual experience, art, design, and lifestyle inspiration also become important factors. Our results indicate that a linear function fits the distribution of values ($p<0.01$), with the adjusted R^2 of the function being relatively high. These resources can only be appreciated at the festival site, and they are highly differentiated. The values for very distant resources were relatively low for the reason explained below.

In this questionnaire, respondents were asked to assign simple cognitive values to resources, and also to determine the extent to which they would recommend these resources to others (the degree of recommendation). Traditional festivals reflect the pride of the inhabitants of each festival site. For this reason, the values recorded for nearby festivals tend to be higher than the values assigned to other festival sites. As a result, a negative linear function could be found in the distribution of the values for each range of distances. The longer the distance, the lower the values (for example: “somewhat agree” and “neither agree nor disagree”). However, negative assessments

(including “somewhat disagree” and “disagree”) did not make up a large proportion of the evaluation of distance.

4.1.6. Hot springs

We could not find any continuous function to fit the distribution of values assigned to hot springs. In this survey, a few hot springs were used as examples. Distance did not influence the cognitive values assigned to hot springs, because every hot spring is famous. Before taking the survey, most respondents could have known about the characteristics of these springs in some detail, and have evaluated them, regardless of distance.

There may be another tourism resource whose value is not related to distance. Elands and Lengkeek (2012) have suggested that tourists’ experience of “out-there-ness” may not always be related to measureable or accurate distance. According to the results of this survey, hot springs may be an example of a tourism resource that is valued more in relation to experience than accessibility. This could help to explain why we did not find any clear relationship between distance and the cognitive values assigned by tourists to hot springs.

4.2. The relationship between impressions of the Noto region and the cognitive value assigned to each type of tourism resource

By understanding what kinds of impressions were related to the values assigned to each type of resource, we aimed to identify the features tourists expected each type of resource to provide. This data would show which people were interested in particular resources, and how those resources could be improved.

In particular, we used the results of Q1 and Q2 to analyze the relationship between residents' stated impressions of the Noto region and the values they assigned to each resource. Multiple regression models were used to analyze each type of resource; and the results of Q1 were regarded as dependent variables, while the results of Q2 were regarded as independent variables. We then examined the correlation between the degree of agreement on each impression asked for in Q2 and the values assigned to each type of resource. We also used distance and its squared value as independent variables to identify any correlation between the cognitive values assigned to resources and distance in the model.

In this section, we show the suitability of the models of each type of resource, and explain the partial correlation coefficients (PCC) of the degrees of agreement related to impressions. In particular, we focus on degrees of agreement that represent statistically significant variables. The results of the multi regressions are shown in Table 4.

Table 4. Multi regression results relating to tourism resources of all types and to each type of tourism resource

	No. of impressions of the Noto region and distance					R^2	p-value
	Partial Correlation Coefficients						
All types	7	10	11			0.273	0.000
	0.225***	0.229***	0.256***				
Landscapes	6	7	10	*D*	D^2	0.251	0.000
	0.188**	0.152*	0.240***	-0.140*	0.158*		
Historical sites and museums	2	10	11			0.252	0.000
	-0.180**	0.241***	0.332***				
Food	7	10	11	*D*		0.170	0.000
	0.231***	0.146*	0.195**	-0.136*			
Festivals	7					0.064	0.042
	0.150*						
Hot springs	7	10	11			0.123	0.002
	0.168**	0.171**	0.180**				

*shows the statistical significance (p-value) of the coefficients of the independent variables; *(p<0.1), **(p<0.05), ***(p<0.01). D and D^2 mean distance and squared distance respectively.

4.2.1. All types

The model was significant (p<0.01) and its R^2 was 0.273. The degree of agreement on the impressions mentioned below had significant positive correlations with the average values for all types of resources.

7. Warm and friendly people

10. A modest and reserved place

11. Fashionable eating and drinking venues

We found that Impression 10, a relatively negative response, correlated with the overall cognitive values assigned to the tourism resources, as did the positive

impressions 7 and 11. This result might appear to show that respondents had a negative impression of the Noto region; however, they were proud of the features mentioned in 7 and 11. These responses remained in the background whenever respondents evaluated tourism resources in the Noto region positively. In this context, therefore, Impression 10, which might otherwise seem negative, can actually be related to a generally positive evaluation of tourism resources in the Noto region.

4.2.2. Landscapes

The model was significant ($p<0.01$) and its R^2 was 0.251. The degree of agreement on the impressions mentioned below had a significant positive correlation with the average values assigned to landscapes as a tourism resource.

6. Leisure activities with family, friends, or a partner
7. Warm and friendly people
10. A modest and reserved place

The distance and its squared value had a significant correlation ($p<0.1$). It is characteristic of the tourism resource of landscape that people enjoy many leisure activities in places where this resource exists; its cognitive value is therefore correlated positively with impression 6, which relates to leisure activity. The Noto region is particularly noted for the unique socio-ecological landscape of Satoyama-Satoumi. One reason why Impression 7 may have correlated with the values of assigned to landscape resources is that this landscape is not only scenic but also a local center and a place for cultural exchange. On the other hand, some respondents may have viewed “landscape” as mere scenery, because the values assigned to landscape resources also correlated with Impression 10, suggesting inactivity.

The quadratic function fit the distribution of the average values for each of the different distance ranges; we found that both nearby and distant landscape resources had relatively high cognitive values. In this respect, the coefficients of variables related to distance were significant; in particular, its squared value had a significant positive coefficient.

4.2.3. Historical sites and museums

The model was significant ($p<0.01$) and its R^2 was 0.252. The degree of agreement on the impressions mentioned below had a significant correlation with the average values assigned to historical sites and museums.

2. Delicious food

10. A modest and reserved place

11. Fashionable eating and drinking venues

Historical sites and museums might not be related to active or positive impressions, as their values correlated with Impression 10. On the other hand, museums offered fashionable eating and drinking venues, and Impression 11 correlated with the values assigned to these tourism resources. One interesting trend was that Impression 2, which related to delicious food, tended to have a negative correlation with the value assigned to historical sites and museums. The Noto region has many traditional foods and vegetables; if these food resources are not synergistically related to cultural resources, such as historical sites and museums, improving that relationship could contribute to raising the cognitive values assigned to these cultural resources, thereby improving the historical sites and museums in question.

4.2.4. Food

The model was significant ($p<0.01$) and its R^2 was relatively low: 0.170. The degrees of agreement on the impressions mentioned below had a significant positive correlation with the average values assigned to food resources.

7. Warm and friendly people

10. A modest and reserved place

11. Fashionable eating and drinking venues

In addition, distance had a significant negative correlation.

One reason why the value assigned to food as a tourism resource may have strongly correlated with Impression 7, is that communication among tourists, farmers, and local people may tend to flourish in places related to the food resource, more than in local supermarkets or restaurants. Respondents could come to appreciate the positive characteristics of local people through such experiences. The weak negative correlation between the distance and cognitive values shows that nearby resources tended to be recommended by respondents and assigned higher values than distant resources.

4.2.5. Festivals

The model was significant ($p<0.05$) and its R^2 was low: 0.064. We were not able to construct a valid model of festival resources. The degrees of agreement on the impressions mentioned below had a significant positive correlation with the average values assigned to festival resources.

7. Warm and friendly people

In studying festivals, were found a significant correlation only between Impression 7 and the values assigned to these resources. The impressions listed in the questionnaire may not have related closely to festivals. Respondents evaluated their

local festivals highly; however, their stated impressions could not taken into consideration in the evaluation process.

4.2.6. Hot springs

The model was significant ($p<0.01$) and its R^2 was relatively low: 0.123. The degree of agreement on the impressions mentioned below had a significant positive correlation with the average value assigned to hot springs as a resource.

7. Warm and friendly people

10. A modest and reserved place

11. Fashionable eating and drinking venues

The friendly and interesting conversations and interactions between tourists and hot springs employees that characterize time spent in traditional hotels, may encourage local people to expect a positive experience. This finding was reflected in the correlation between the values assigned to such resources and Impression 7. The hot springs were associated not only with inactivity, but with fashionable venues. In this survey, we could not identify any clear relationship between accessibility and the values assigned to hot springs as a tourism resource. The stated impressions can therefore be seen as reflecting the enhanced attractiveness associated with these resources, regardless of accessibility. As nostalgia and the unique atmosphere of a hot spring relate to Impressions 7 and 10 of the resources, making these sites fashionable could enhance their sustainable management.

5. Discussion

5.1. The relationship between accessibility and the values assigned to each type of tourism resource

Some resources are related to cultural or provisioning services, which are included in concept of ecosystem services. For example, the resources of landscapes, festivals and hot springs are related to cultural services, while offering food is a form of provisioning service. Our results show that different types of cultural services may be differently related to accessibility and cognitive values. We found that the average values assigned to resources of all types and the values assigned to landscapes did not decrease along the negative linear function of distance; the values assigned to landscapes in distant places were relatively high, as were the values assigned to nearby resources. These characteristics of the landscape resource may suggest that landscapes can be differentiated from other tourism resources and cultural services because they cannot be appreciated in places where the resource does not exist. The cognitive values assigned to distant landscape resources could be higher than the cost of travel to distant places. We found that the values assigned to food resources might not decrease along negative linear functions, as per landscape resources. The distribution trend of values assigned to landscapes and food could be reflected in the overall trend for the average values assigned to resources of all types.

Our analysis of the relationship between impressions of the Noto region and the cognitive values assigned to each type of resource shows that respondents evaluated various points associated with different types of resource differently. This might explain why the distribution of values assigned to resources in each distance range differed in accordance with the types of resource being evaluated.

5.2. Exploring synergistic combinations of tourism resources

The results of our analysis of the relationship between impressions of the Noto region and cognitive values shows clearly which impressions correlate with which resources. For example, Impression 7, on communication with local people, and Impression 11, on fashionable eating and drinking venues, were related to several types of resources and could provide a focus for visiting tourism resources and traveling in the Noto region.

In recent years, there has been a need to enhance regional competitiveness and create attractive travel experiences based on the development of synergistic combinations of different types of tourism resources. For example, food as a tourism resource can be evaluated in relation to its quality, but also in relation to the experience of visiting a morning bazaar or wine factory and communicating with other visitors and local people there. Bessiere and Tibere (2013) have suggested that experiences with local food culture can create special moments in a trip, and that, "the consumption of local specialties is a symbolic consumption of a land, region, province, of its soil and a symbolic link with its population." Sidali et al. (2013) have proposed combining the intimacy model and the experience economy for rural development based on food tourism. According to earlier research, food-related tourism resources can enhance regional development by enhancing the value of the food itself, while creating elaborate and synergistic combinations of different types of tourism resources and providing visitors with a unique experience. Those combinations can be designed to take advantage of the socio-ecological environment of each region. Not only in relation to food but also when considering ways to enhance other types of resources, including landscapes, festivals, and hot springs, synergistic combinations can be explored to find new ways to manage tourism sustainably within a region.

5.3. Collaboration among across wider regions beyond administrative boundaries

We identified three categories of tourism resources: resource values distributed along quadratic functions (U curves); values that decreased along negative linear functions; and values that did not have a clear linear or nonlinear relationship between accessibility and values. To enhance the attractiveness of the whole Noto region, improving the values assigned to resources that fall between nearby and distant places, and the values of very distant places can be effective; it can also be effectively implemented through collaboration among the wider regions. For this reason, managers and tourism providers should consider tourists' impressions of various types of tourism resources in regions beyond their own administrative bounders. Future research is needed to explore why some places have low cognitive values; the results of this research will be able to identify regional issues that need to be urgently tackled. It is important to note that landscapes, in particular, are a tourism resource that can easily be adapted for collaboration among wider regions, because the values assigned to resources in remote places are relatively high, while stakeholders across a wider area are more likely to be aware of a particular resource of the need for collaboration.

5.4. Limitations

We focused specifically on distance and its relationship to the cognitive value assigned by residents. It will be worthwhile for us, in our future research, to explore the relationships between other individual attributes, such as the number of tourist trips made in the last year, age, income, and place of origin; these can also influence cognitive value. In addition, modes of transport change the time spent accessing resources, and travel time may influence cognitive value. Given its importance, we plan

to examine the relationship between the cognitive value and travel time in our future research.

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