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The Contribution of Local Food Products in Fostering Tourism for Marginal Mountain Areas: An Exploratory Study on Northwestern Italian Alps

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This paper examines visitors' behaviors toward local food products when visiting a less favored mountain community in the Italian Alps. The aim of the study was to assess the role of local foodstuffs in fostering tourism in inner

mountain areas. Primary data are based on 507 responses to an online questionnaire created with the Google Module platform. Participants' behaviors are analyzed with descriptive statistical tools, whereas their opinions on food services are analyzed using Kruskal–Wallis χ^2 and Mann–Whitney tests. Our evidence shows

that although tourists are willing to taste and purchase local food products, the revenue for the local community appears to be limited, with an average expenditure of \leq 22.80/person (US\$ 27.29/person), under a liberal spending scenario. Our research findings give original insights that can help local policymakers better understand how they can develop tourism through local food production.

Keywords: mountain tourism; local food products; tourist behavior; marginal areas.

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Introduction

A priority of European Union (EU) institutions is to develop policies promoting regional development in areas facing natural or other specific constraints (ANCs). These areas are characterized by specific natural conditions that cause more difficulties for farming activities than conventional rural areas. Mountain areas are considered ANCs because of their elevation and the steepness of their slopes.

ANC development policies aim to reduce disparities across areas with different geomorphological characteristics by supporting local activities and local inhabitants' income. Agriculture and related wine and food production enable the development of this strategy and can produce socioeconomic advantages in rural communities (Tregear et al 1998; Belliveau 2005; Brown and Miller 2008; Schnell 2011; Sgroi et al 2014). At the same time, in difficult environments such as mountain areas subject to depopulation, the balance between agriculture and local economy is precarious. Some local aspects, such as the landscape and the vitality and quality of agricultural products, depend on the ability to preserve or improve the agricultural production structure (Ruffini et al 2011).

Furthermore, consumers tend to be sensitive to the origin of food products, associating origin with tradition (Vanhonacker et al 2010). Agricultural products, such as local foodstuffs, can cocreate local brand identity, stimulate

tourism, and support the promotion of tourism destinations (Berno and Fusté-Forné 2020).

These benefits from agriculture can also be achieved in areas with specific geographical and climatic constraints, such as mountains. The development of mountain agriculture and the commercialization of mountain products are ways of encouraging sustainable development in mountain areas. Mountain agriculture can be an element in the conservation of traditional practices (MacDonald 2013) and production of desirable products (Martins and Ferreira 2017), which can stimulate and support the local tourism sector.

The connection between agriculture and tourism can bring about and feed new opportunities for innovative tourism destinations, as well as consolidate existing ones (Martini and Buffa 2015)—for example, through agritourism initiatives (Rilla 2011; Ciolac et al 2020) or the "from farm to fork" approach (Berno 2011). Moreover, consumers create a strong link from quality produce to community identity and the local economy (Schjøll et al 2010).

Based on the preceding considerations, this study aims to verify the role of mountain food produce as a vehicle for tourist offerings in a specific marginal mountain area by analyzing visitors' behaviors in terms of both purchasing local produce and accessing food services. To achieve this, during the 2018 summer season, an online questionnaire was given to a sample of 507 tourists who were randomly selected in the area under investigation. We focused on a marginal

mountain community in the northwestern Italian Alps, the municipality of Valprato Soana (Piedmont), that has high-quality natural and cultural heritage. The municipality is concentrating its efforts on fostering sustainable tourism, using local foodstuffs to characterize the tourist experience. This topic is not new; it has been studied by several scholars, for example, in terms of sustainability (Berno 2011) and tradition (Rilla 2011; Martini et al 2016; Berno and Fusté-Forné 2020). However, to the authors' knowledge, it remains to be examined in the context in which the present research has been carried out, that is, in less favored mountain areas. Valprato Soana is representative of Piedmont mountain areas that have high levels of socioeconomic marginality. As such, the results of this research are applicable to other mountain communities with similar characteristics.

Evidence from the study shows that even though tourists are willing to taste local food, this generates limited revenue for the local community. To foster local foodstuffs as a pivot for local development, policymakers and operators should first educate the visitors about the value and heritage of the foodstuffs.

Literature review

ANCs are geographical areas with natural limitations, such as water scarcity, a short crop season, or mountainous or hilly terrain characterized by high elevations and steep slopes. Typically, these natural limitations are coupled with depopulation trends. EU Regulation 1305/2013 defines ANCs (updating the older term, less favored areas [LFAs]) and highlights the importance of basing this definition on objective criteria (ie biophysical criteria supported by robust scientific evidence) to ensure efficient use of EU funds and equal treatment of EU farmers. This policy aims to reduce and then eliminate payments in areas that are not considered ANCs under the new regulation. In this sense, ANCs are one of the EU's priorities for policies dedicated to agriculture and rural development. These aim to maintain production and commercial activities considered essential for the production of local wealth, as well as to slow depopulation and protect the area by conserving and safeguarding natural and cultural heritage. Agriculture and related food production enable this strategy to be developed.

Agriculture and mountain products

Agriculture and related food products offer advantages such as differentiating and characterizing local products from similar conventional ones (Schnell 2011), maintaining and strengthening short-range commercial networks, and preserving and protecting cultural traditions (Tregear et al 1998). They strengthen the direct relationship between producers and consumers (Belliveau 2005), stimulating the visibility of local products (Brown and Miller 2008), supporting small producers, and protecting work within rural communities (Sgroi et al 2014; Sidali et al 2015). Moreover, consumers are interested in local food and its origin.

In the past, origin has been associated with tradition (Vanhonacker et al 2010) or with intrinsic product qualities. On this basis, several quality system tools were implemented (Bernués et al 2003; Van Ittersum et al 2007; Banterle and Stranieri 2008; Resano et al 2012) to guarantee transparency

on qualitative characteristics of food products. The EU has introduced certification systems, such as protected denomination of origin and protected geographical indication, and labeling schemes, such as the quality term "mountain product" (Bonadonna et al 2017; Bentivoglio et al 2019). These guarantee the origin and specific characteristics of local products.

Benefits from agriculture can also be achieved in areas with specific geographical and climatic constraints, such as mountains. The development of mountain agriculture and the commercialization of mountain products represent ways to boost the sustainable development of mountain areas. Several studies have highlighted the potential of mountain agriculture. It can support protection of the ecosystem, economy, and local culture (Holloway et al 2006). It is an element of social balance and identity (Soliva et al 2008; Robinson 2009) and a tool to fight depopulation and increase the attractiveness of the area (Pasca and Rouby 2012). Furthermore, mountain agriculture, when preserved, supports the conservation of traditional practices (MacDonald 2013) and the creation of products that are appreciated by the agrifood market (Borec et al 2009; Majkovič and Borec 2010; Baritaux et al 2011; Bonadonna and Duglio 2016).

Mountain products and consumers

Generally, consumers are inclined to create strong links between the perceived quality of mountain products and the related production areas, associating them with the area's identity and the local economy (Schjøll et al 2010; Reuillon et al 2012). Based on EU assessments (Santini et al 2013), European consumers tend to express a positive opinion and assign a higher value to these products compared with conventional ones, provided that the supply chain is entirely within mountain areas. Basically, they regard the mountain environment as a natural and contamination-free place and associate the mountain product with positive aspects, such as purity, authenticity, and simplicity—although they make this association more readily with products of animal origin (ie dairy products and meat) than with those of vegetable origin (Schjøll et al 2010; Santini et al 2013). In addition, consumers seem to be attentive and sensitive to issues like respect for the environment and animal welfare, rather than focusing on prices and trademarks (Tebby et al 2010; Zuliani et al 2018). At the same time, producers and retailers tend to agree about the need for greater exposure of and communication about mountain products to support development of mountain agricultural activities (Baritaux et al 2011; Böni and Seidl 2012).

It is these considerations that led to the implementation of the mountain product scheme—an optional quality term aimed at promoting mountain products using a specific label. This tool is intended to increase consumer confidence and promote sustainable development in marginal rural areas by making local products more readily recognizable by consumers (McMorran et al 2015; Finco et al 2017; Martins and Ferreira 2017; Bentivoglio et al 2019).

Local food and tourism

The tourism sector can pursue the objectives already indicated for agriculture in mountain areas. Mountain tourism involves various aspects, such as the

geomorphological characteristics of the area with its related fauna and flora, as well as social and cultural heritage. These elements are assessed by tourists, who focus their attention on particular aspects of the mountains to satisfy a range of needs, such as relaxation, sport activities, wellness, culture, and food (Cater 2015; Duglio and Beltramo 2019; Giachino et al 2020).

Food is considered a key element in designing a tourism product (Jenkins 1999; Bukharov and Berezka 2018; Ermolaev et al 2019), and it is a specific component of a tourism experience (Quan and Wang 2004; Kivela and Crotts 2006; Horng and Tsai 2010; Bukharov and Berezka 2018; Rachão et al 2020). In this context, local food plays an important role in motivating travel (Sanchez-Cañizares and Castillo-Canalejo 2015) and in characterizing tourism destinations (Cohen and Avieli 2004; Okumus et al 2007; Cardoso et al 2019). Moreover, the food heritage of a specific area creates both sensorial and sociocultural values. This cocreation involves historical and environmental factors that extend the meaning of local food and increase the value of the area (Tregear et al 1998; Sims 2009; Vanhonacker et al 2010).

Food is therefore an important element of tourism in rural areas. It supports the tourism industry by enhancing rural culture and facilitating the integration of rural traditions and the local environment, for example, cheese production (Fusté-Forné 2015; Marcoz et al 2016; Ermolaev et al 2019; Folgado-Fernández et al 2019). Sometimes, local stakeholders (particularly farmers and tourism operators, as well as local associations and public entities, like parks) support the link between local food and rural tourism. In these cases, collaboration and communication are essential. Local stakeholders can work together and introduce elements of innovation to increase local activities, such as tourism (Kumer et al 2019), and they can improve profitable collaboration among them (Skordili and Tsakopoulou 2019).

In this context, food and culinary tourism emerge as important elements of visiting mountain areas. For instance, a study by Giachino et al (2020) underlined how the millennial generation chooses mountain travel destinations for 6 main reasons that are differentiated by importance based on seasonality, except for food and wine, which are not influenced by the seasons.

Few studies have focused on the link between tourism and local food. Fusté-Forné (2019) highlighted the role of a specific food, mushrooms, in defining local culture and community identity and the seasonality of tourism in a harsh environment.

Duglio et al (2019) evidenced that stakeholders stress the importance of 3 elements to safeguard and enhance the characteristics of a mountain area: regional promotion, collaboration among operators, and the offer of local food products. In this case, local food is identified as a key element to improve the touristic appeal of the area and increase local income.

The preceding considerations show that the link between tourism and local products in mountain areas, especially less favored ones, still needs to be thoroughly investigated with regard to the role of mountain foodstuffs as an engine for tourism.

This study has 2 main research hypotheses. Based on the cited studies, and as pointed out by Berno and Fusté-Forné (2020), it may be expected that tourists want to sample local

food products. Consequently, it is likely that this will have a positive effect in terms of economic returns for local operators.

Material and methods

The area of investigation

The research hypotheses were tested with reference to the specific context of a marginal mountain area in the northwestern Italian Alps, the municipality of Valprato Soana. This is a small mountain community in Piedmont Region, about 70 km from the main regional center, the city of Turin (Figure 1).

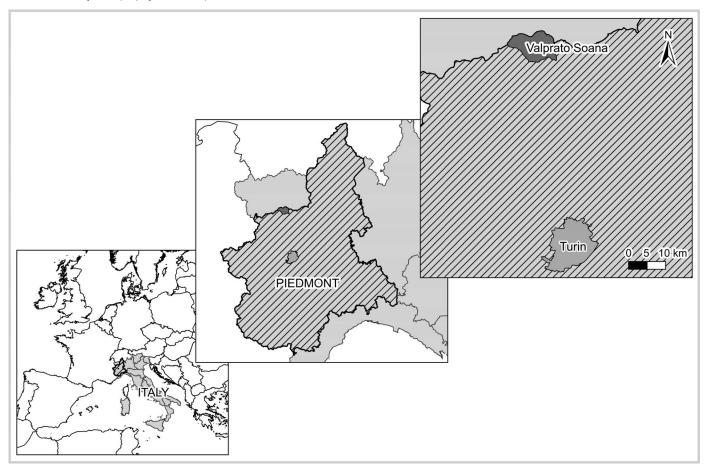
The municipality of Valprato Soana (45°31′18.12″N, 07°33′0.36″E) covers a huge area of about 7157 ha, of which 4941.7 ha (68.8%) are within the borders of Italy's oldest national park, the Gran Paradiso National Park, established in 1922. The 114 inhabitants of Valprato Soana are dispersed across the main center and its 14 surrounding villages.

The case study area was selected because of its high level of socioeconomic marginality. From a socioeconomic viewpoint, Valprato Soana is marked by one of the lowest marginal values in Piedmont Region, namely, -0.424, as indicated by the Piedmont Institute for Socioeconomic Research (IRES Piemonte) in its report on the marginality index for all Piedmontese mountain municipalities (Crescimanno et al 2008; IRES Piemonte 2016). Valprato Soana is representative of Piedmont mountain communities with high socioeconomic marginality levels: It covers a large area (>50 km², like 30% of the mountain municipalities in Piedmont), has a limited number of inhabitants (<500, like 45% of the mountain municipalities), uses less than 10% of its area for agriculture (like 40% of the mountain municipalities), and has a limited number of farms (fewer than 10 farms and 5 breeding operators, as is the case for 30 and 26%, respectively, of the mountain municipalities) (IRES Piemonte 2016). This makes Valprato Soana an interesting and representative case study.

Valprato Soana's local economy is strongly characterized by the agriculture and tourism sectors. Three local farms use an agricultural area of 104 ha. Although crops are marginal products, livestock breeding represents the main agricultural activity, with about 400 head of cattle and 500 small ruminants scattered across 14 grazing areas during the summer season (Duglio et al 2019). For the tourism sector, a recent analysis (Duglio et al 2019) counted 2 hotels, a guesthouse, a mountain bivouac, and a mountain hut, offering a total of 54 beds. There are no retailers operating in Valprato Soana; instead, they are concentrated in the adjacent municipality of Ronco Canavese.

Official tourism statistics provided by the regional tourism office for the period of 2015–2018 clearly show an increase in both tourist arrivals and tourist presence. The most recent available data for 2017 (Regione Piemonte 2018) reported 689 arrivals (there were 375 in 2015) and 1204 tourists staying in the region (484 in 2015), with an average length of stay of 1.8 d/person (1.4 in 2015). The percentage of foreign tourists is still low and accounts for about 15% of all visitors. As far as domestic tourists are concerned, this area is mostly visited by day-trippers (Duglio et al 2019). To assess our research hypotheses on the potential pivotal role of local foodstuffs in fostering tourism in this area, we decided to

FIGURE 1 The study area. (Map by the authors)



engage Valprato Soana tourists for a better understanding of their behaviors toward local food products.

Data collection and analysis

Data on visitor behaviors were collected during the 2018 summer season using an online questionnaire created with the Google Module platform. Respondents were randomly selected at the 2 tourism parking areas, located in the villages of Campiglia Soana and Piamprato Soana, respectively, on all weekends from mid-May to mid-September 2018.

To facilitate participation in the online survey, on the weekend before the collection phase, the project goals were presented, alerting tourists to the questionnaire that was coming soon. Furthermore, tourists were asked to provide their email addresses so that the researchers could send them the questionnaire link on the following Thursday. This method covers different expenditure typologies (Stynes and White 2006). In addition, collecting spending data straight after the visit reduced the negative effect of response bias (Dillman et al 2014). Moreover, to avoid multiple responses, respondents could only fill in the questionnaire once.

As a result, 697 email addresses were collected during the season, and 507 respondents participated in the research (72.7%). Participants were asked to specify their origin, who they were visiting the area with, the visit activity, and whether this was their first tourism experience in the area. Next, tourists were asked about their behavior relating to

purchasing local food products in terms of both the product category and the cost of their purchases.

The proposed categories considered products produced in the Soana Valley, as well as products used by local restaurants in local recipes: Toma cheese, local bread, honey, Genepì liqueur, Soana Valley ham, Soana Valley *mocetta* (a specific kind of salami), Gran Paradiso beer, and some minor foodstuffs (butter and bakery products).

To estimate tourists' spending, price classes were first expressed in euros. The Google currency converter (dated 4 May 2018, at the beginning of the email collection step) was used to convert euros into US dollars ($\leq 1 = \text{US} \$ 1.20$). We decided to consider 3 scenarios: in the conservative scenario, each purchase was considered to be at the bottom of the corresponding price class (≤ 1 [US\$ 1.20], ≤ 11 [US\$ 13.16], etc), in the average scenario, each purchase was considered to be in the middle of the corresponding price class (≤ 5 [US\$ 5.98], ≤ 15 [US\$ 17.95], etc), and in the liberal scenario, each purchase was at the top of the corresponding class (≤ 10 [US\$ 11.96], ≤ 20 [US\$ 23.92], etc).

Furthermore, a specific question on tasting local recipes was posed. Lastly, respondents were asked to give their opinion of the food services on a Likert scale (1 = totally unsatisfied, 5 = totally satisfied).

Questions on tourists' behaviors with respect to local food products were subjected to analysis using descriptive statistics, contingency tables, Cramér's V (ϕ c), and Pearson and Spearman correlation coefficients. Kruskal–Wallis χ^2 and Mann–Whitney tests were performed for the visitors'

behaviors and opinions on food services. Data were processed using SPSS statistics software, version 26.

Results

Most participants were men (54.8%) aged between 46 and 55 (26.8%), with a senior high-school education (48.9%); many visitors had an advanced degree (41.4%; 4.1%) with a PhD), as shown in Table 1. For 25.8% of the sample, it was their first tourism experience in Valprato Soana.

Tourists were asked to state the municipality from which they came. Of 507 tourists, 443 were from only 7 Italian provinces, concentrated in 3 main regions: Piedmont, Lombardy, and Aosta Valley. A more detailed investigation showed that 79.5% of them came from the city of Turin, located only 70 km from the ANC study area of Valprato Soana, highlighting how this destination is characterized by proximity tourism. Milan (n = 21; 4.1%) and Aosta (n = 9;1.8%) represent the second and third most frequent origins, followed by other minor destinations equally divided between Piedmont (Alessandria and Biella) and Lombardy (Como and Varese). The remaining visitor origins, contained in the category "others" (n = 64), were scattered among all northern Italian regions. This category also contained 12 respondents from abroad (2.4%): 8 from European countries and 5 from other continents (North America and Australia).

To perform a more detailed analysis, we decided to define origin classes based on the distance from the tourists' residences by calculating the distance in kilometers between the Valprato Soana town hall and the tourists' town halls, using Google maps. Then, tourists were classified into 5 classes, as reported in Table 1. The data show that 68.8% of the respondents came from a place less than 75 km from Valprato Soana.

Finally, visitors were asked to indicate with whom they traveled to Valprato Soana. "With my partner," "with friends," and "with my family" together represented more than 90% of the respondents.

Table 2 first reports the tourists' activities when visiting Soana Valley, followed by respondents' behavior with respect to purchasing local food products. Even if visitors' activities were mainly related to outdoor pursuits (mostly hiking) and leisure, gastronomy represented the third most reported reason for visiting the valley. In Soana Valley, 58.2% of the participants affirmed that they had purchased local food products. Of the 295 tourists who decided to buy local foodstuffs, only 72 (24.4%) were visiting the valley for the first time, and 210 (71.2%) already knew the products. Specifically considering the buyer subcluster, only 33 of 210 respondents (15.7%) were new tourists to the area. Visitors traveling with family were more inclined to purchase local food products: 65.8% of travelers "with my family" compared with 56.3% of travelers "with my partner" and 51.7% of those "with friends."

To give a deeper insight into the visitors' behaviors toward local food products, both Pearson and Spearman correlation coefficients were used, as reported in Table 3. Both tests evidence a strong correlation between staying overnight in the area and having tested or purchased local food products, as well as having visited the valley for gastronomy experiences (P < 0.01). There was another strong correlation between purchasing local foodstuffs and

TABLE 1 Respondent profile (n = 507).

Variable		Frequency	Percentage
Gender	Male	278	54.8
	Female	229	45.2
Age (y)	<16	1	0.2
	16–25	35	6.9
	26–35	89	17.6
	36–45	97	19.1
	46–55	136	26.8
	56–65	107	21.1
	>65	42	8.3
Education	Elementary school	3	0.6
	Junior high school	46	9.1
	Senior high school	248	48.9
	Degree	210	41.4
Origin (provinces)	Torino	385	79.5
(provinces)	Milano	21	4.1
	Aosta	9	1.8
	Alessandria	8	1.6
	Biella	7	1.4
	Como	7	1.4
	Varese	6	1.2
	Others	64	12.6
Origin (km from destination)	<30	69	13.6
uestiliationj	30–50	141	27.8
	51–75	139	27.4
	76–100	41	8.1
	>100	117	23.1
First visit in the area	Yes	131	25.8
the area	No	376	74.2
Travel category	Alone	27	5.3
	With my partner	174	34.3
	With friends	145	28.6
	With my family	149	29.4
	With an organized group	12	2.4

having lunch or dinner in the area (P < 0.01). However, both tests evidence a significant inverse correlation between first travel experience in the area and knowledge of the local products that have been purchased by tourists. There was no correlation between the traveler categories and the purchase of local foodstuffs. When purchasing local food, the average

TABLE 2 Tourist behavior (n = 507).

Variable		Frequency	Percentage
Activity	Hiking	369	40.2
(<i>n</i> = 918)	Relaxing	254	27.7
	Gastronomy	108	11.8
	Skiing	39	4.2
	Mountain biking	31	3.4
	Mountain climbing	30	3.3
	Snowshoeing	20	2.2
	Cycling	19	2.1
	Mountain running	16	1.7
	Other activities	32	3.5
Purchase of	Yes	295	58.2
local food products (n = 507)	No	212	41.8
If yes: I already	Yes	210	71.2
knew these products $(n=295)$	No	85	28.8
Product	Toma cheese	235	28.2
typology (<i>n</i> = 832)	Local bread	102	12.3
	Honey	101	12.1
	Other bakery products	88	10.6
	Genepì liqueur	79	9.5
	Soana Valley mocetta	71	8.5
	Butter	58	7.0
	Soana Valley ham	56	6.7
	Gran Paradiso beer	21	2.5
	Other products	21	2.5

number of items purchased was 2.83 per person, concentrated on the following 3 commodities: cheese (235 times), bread (102 times), and honey (101 times).

Moreover, respondents were asked to state their expenditure by selecting a suggested price class for different kinds of potential local purchases (Table 4). In the table, price classes were first expressed in euros and then converted into US dollars ($\le 1 = \text{US} \$ 1.20$).

First, 41.8% of participants did not purchase local food products. Second, the most selected price classes were the lowest: 19.5% spent from \leq 1 (US\$ 1.20) to \leq 10 (US\$ 11.96), and 20.7% spent from \leq 11 (US\$ 13.16) to \leq 20 (US\$ 23.92). These results confirm the finding of Qi et al (2017) that the price of local products can represent a barrier to their purchase.

Even considering the best possible scenario, the liberal scenario, the total estimated revenue was \leq 6710 (US\$ 8028),

with average tourist expenditure being about \leq 22.80 (US\$ 27.29) for 294 respondents, one missing datum. Assuming the average scenario, the total estimated revenue decreased to \leq 5200 (US\$ 6221), or \leq 16.70/person (US\$ 19.98/person), and assuming a conservative scenario, it dropped to \leq 3984 (US\$ 4766), or \leq 13.60/person (US\$ 16.27/person).

Finally, consideration was given to tourists' behavior and the food services, as reported in Table 5. This aspect is consistent with the research goal, because it may be considered an indirect indicator of the role of local food products for the hospitality sector, considering that the previously mentioned local produce (cheeses, butter, salami, honey, etc) represent important raw materials for local recipes.

As far as food services were concerned, 238 tourists (70.8%) who had their lunch or dinner in the valley restaurants (n=336) tasted local recipes. The contingency analysis of tourists' behavior shows that 64 respondents who tried local recipes (n=238, 26.9%) were visiting the area for the first time. For this specific case, however, the Cramér's V (φc) between the "I tasted local recipes" and the "First time in Valprato" variables was only 0.027, thus displaying no link between the 2 variables. Furthermore, extracting the cluster of those who had both purchased products and had their lunch or dinner in the valley (n=219) showed that 172 respondents (78.5%) had tried local recipes (36 tourists) stated "no" and 10 tourists stated "I do not know").

Moreover, and in light of recent studies pointing out that tourists' tasting of local dishes is an important part of travel experiences (Sanchez-Cañizares and Castillo-Canalejo 2015; Sengel et al 2015), we decided to insert an assessment field for food services to give an indirect indication of the relation between the local food and the perception of the quality of the tourism sector. Therefore, tourists were asked to assess the food services based on a Likert scale from 1 (totally unsatisfied) to 5 (totally satisfied). The weighted average value was 3.4 of 5. For this topic, a Kruskal-Wallis χ^2 test was performed to verify the existence of statistically significant differences in terms of education, origin (distance in kilometers), age classes, and traveler categories, whereas a Mann-Whitney test was carried out to verify differences in terms of gender and in terms of first or not first visit to Valprato Soana (Table 6). The tests showed significant differences for education and age (at P < 0.10).

Discussion

The first important aspect in assessing the role of local food in tourism in the area is related to the origin of tourists. Data show that the Soana Valley is mostly visited by day tourists, with only 32.1% of the respondents staying overnight in the valley. This contributes to explaining the low average length of stay (1.8 d/person) and can affect the way tourists interact with local operators and their knowledge of the local heritage. This aspect is consistent with other studies that highlight how mountain tourism satisfies a vast range of needs, such as relaxation, sporting activities, and wellness, as well as food consumption (Giachino et al 2020), particularly of local products (Andersson et al 2017). However, gastronomy is never the only activity in Valprato Soana but is always associated with other aims, especially hiking and relaxing, which are the main activities carried out by tourists

TABLE 3 Correlation analysis.

Variable	With whom you traveled	First travel experience in the area	Gastronomy activity	Did you stay overnight in the area?	Did you have lunch or dinner in the area?	Did you purchase local foodstuffs?	Did you know these products before purchasing them?	Origin (distance in km)
Pearson correlation coefficients								
With whom you traveled	1.000							
First travel experience in the area	0.020	1.000						
Gastronomy activity	-0.026	0.048	1.000					
Did you stay overnight in the area?	-0.035	0.105*	0.161**	1.000				
Did you have lunch or dinner in the area?	-0.030	0.011	0.216**	0.366**	1.000			
Did you purchase local foodstuffs?	-0.069	-0.039	0.223**	0.301**	0.199**	1.000		
Did you know these products before purchasing them?	0.067	-0.318**	-0.058	-0.038	0.019	_	1.000	
Origin (distance in km)	-0.052	-0.351**	-0.088	-0.330**	-0.071	-0.074	0.246**	1.000
Spearman correlation coefficients								
With whom you traveled	1.000							
First travel experience in the area	0.039	1.000						
Gastronomy activity	-0.032	0.048	1.000					
Did you stay overnight in the area?	-0.025	0.105*	0.161**	1.000				
Did you have lunch or dinner in the area?	-0.018	0.011	0.216**	0.366**	1.000			
Did you purchase local foodstuffs?	-0.067	-0.039	0.223**	0.301**	0.199**	1.000		
Did you know these products before purchasing them?	0.064	-0.318**	-0.058	-0.038	0.019	_	1.000	
Origin (distance in km)	-0.063	-0.439**	-0.043	-0.380**	-0.069	-0.079	0.271**	1.000

^{**}Correlation significant at the 0.01 level.

in this area. Further analysis showed that gastronomy was associated with hiking 19 times, relaxing 16 times, and both 61 times. Nonetheless, as highlighted by López-Guzmán and Sánchez-Cañizares (2012), the local cuisine, although not the main motivation for tourists' visit, plays a considerable part in the perception of the experience.

This last consideration seems to be confirmed by the number of tourists who purchased local food (58.2%; n=507). Cramér's V (ϕ c) for the variables "first time in Valprato Soana" and "I purchased local food products" was 0.039, showing a very low connection between the 2 variables. However, Cramér's V (ϕ c) between "I already knew these products" and "first time in Valprato" was 0.318, showing a good link between the 2 items. Therefore, our results prove that it is less probable that visitors will purchase local food

products during their first visit but mostly because they are not aware of their existence. This evidence is supported by both Pearson and Spearman tests. However, tourists who stayed in the Soana Valley also had their lunch or dinner in the valley and purchased local food products.

The average number of purchased items, together with all proposed food and beverage categories being appreciated by tourists, confirms tourists' interest and that tasting and purchasing local products enhances the tourist experience (Sengel et al 2015; Sims 2009). Even though local foodstuffs seem to be generally appreciated by tourists, the economic return for local operators remains limited. More than 40% of survey participants did not purchase local food products, and the willingness to pay on the part of those who decided to taste them remains low, as evidenced by our 3 scenarios.

^{*}Correlation significant at the 0.05 level.

TABLE 4 Tourist expenditure in local food products (n = 507).

Variable	Frequency	Percentage	
Expenditure estimation for purchasing local foodstuffs in € (in US\$)	From € 1 to 10 (US\$ 1.20–11.96)	99	19.5
	From € 11 to 20 (US\$ 13.16–23.92)	105	20.7
	From € 21 to 30 (US\$ 25.12–35.89)	55	10.8
	From € 31 to 40 (US\$ 37.08–47.85)	20	3.9
	From € 41 to 50 (US\$ 49.04–59.82)	5	1.0
	From € 51 to 60 (US\$ 61.01–71.77)	5	1.0
	From € 61 to 70 (US\$ 72.97–83.73)	2	0.4
	From € 71 to 80 (US\$ 84.93–95.70)	1	0.2
	From € 81 to 90 (US\$ 96.89–107.66)	0	0.0
	From € 91 to 100 (US\$ 108.85–119.64)	0	0.0
	From \in 101 to 150 (US\$ 120.82–179.43)	0	0.0
	From € 151 to 200 (US\$ 180.63–239.28)	2	0.4
	No purchase	212	41.8
	Missing	1	0.2

In terms of food services, tourists' interest in local foodstuffs is confirmed by those who had lunch or dinner in the restaurants of the valley deciding to taste local recipes (70.8%; n=336). Moreover, 33.9% of visitors had local food products twice during their visit to Valprato Soana, as both dining experiences and purchases. In assessing local food services, tourists were moderately satisfied (averaging 3.4 points out of 5; n=287), and the Kruskal–Wallis χ^2 test shows that those with a high level of education and between the ages of 46 and 65 are more inclined to score 4 or 5 of 5. These results are consistent with the insights provided by López-Guzmán and Sánchez-Cañizares (2012) in underlining how a "cultured" tourist is more likely to highly appreciate gastronomy and food services.

As with all field-based research projects, this study has some limitations. The main limitation is the tourist sample (n=507), which was selected randomly. The survey was conducted because previous studies and detailed tourism statistics were not available for this area, which is a secondary tourism destination compared with other mountain destinations in this part of the Italian Alps. This research represents a first attempt in Soana Valley to analyze tourist behaviors toward local food products. The results are therefore exploratory, but they provide an important base for further research activities in this field. Because the Soana Valley is representative of many other inner mountain areas in the region, results and considerations from this study may be of interest to other communities. Additional efforts should be made to encompass considerations of non-Italian tourists. Although they are few in the area, this would provide a more complete and clearer picture of the topic.

TABLE 5 Food services (n = 507).

Variable		Frequency	Percentage
Lunch or dinner in Soana Valley? $(n = 507)$	Yes	336	66.3
	No	171	33.7
Did you taste local recipes?	Yes	238	70.8
(n = 336)	No	79	23.5
	l do not know	19	5.7
Food services assessment: ${f 1}={f totally}$ unsatisfied to ${f 5}={f totally}$ satisfied $(n=336)$	1	18	5.4
	2	26	7.7
	3	103	30.7
	4	99	29.5
	5	41	12.2
	I cannot answer this question	49	14.6

TABLE 6 Statistical tests.

Food services assessment						
Kruskal–Wallis χ ² test	SD	Differences by education	Differences by age	Differences by origin	Differences by traveler category	
	1.044	12.253*	12.306*	0.805	3.002	
Mann-Whitney test	SD	Differences by gender	Differences by first or not first visit to the area			
	1.044	10,146.500	6744.500			

^{*}P < 0.10, level of significance.

These limits represent possible future avenues of research. Future studies should concentrate on other ANCs in the Alpine range to assess whether outputs depend on social context and dynamics, considering the different local policies for promoting mountain communities, their food products, and tourism offerings. Furthermore, it will be important to verify the conditions necessary to make local food products pivotal in fostering tourism in marginal areas.

Conclusion

The development of ANCs, mountainous or hilly environments characterized by natural and social limitations, is a focus for EU policies that aim to implement actions to sustain and support these areas. In marginal mountain areas, the agricultural sector and food production can provide local communities with a direct source of income. This particularly benefits farmers and hospitality sector operators if local foodstuffs assume a central role in the local tourism offerings.

Our findings concerning an ANC in the northwestern Italian Alps show that local food products can represent added value, as proven by visitors' interest in tasting local recipes and purchasing local foodstuffs. Our first research hypothesis—that tourists are willing to taste local food products—is therefore confirmed by our provisional results, namely, that gastronomy is the third most popular tourist activity, with 58.2% of tourists confirming that they had purchased local food products and 78.5% of those who had lunch in the valley saying they had tasted local recipes. This is particularly significant with regard to those tourists who stay in the area for more than 1 day.

However, the economic impact for both local farmers and tourist operators remains limited. Our second hypothesis—that tourists' willingness to taste local food has a positive economic return for the local operators—is not supported by our results, because the average tourist's expenditure is only about € 22.80 (US\$ 27.29) in a liberal scenario and more than 40% of the sample had not purchased local products. Even considering the indirect contribution of local food products as the main components of local recipes offered by the hospitality sector, there is room for improvement: 21% of visitors stated that they had not tasted local dishes. To the authors' knowledge, this study represents the first attempt to understand the interaction between the mountain local food products and the tourism sector in a marginal mountain region in the northwestern Italian Alps. Valprato Soana, as a small mountain community, is representative of the Piedmont mountain areas with high levels of socioeconomic marginality.

Our findings offer information that can be used in developing local policies. Policymakers should concentrate their efforts on promoting actions to increase the number of potential purchases and revenue for the host community. Of our sample, 41% affirmed that they had not purchased food products in the area. It is less probable that tourists visiting the area for the first time will purchase local food products, partly due to a lack of knowledge about their existence. Moreover, because this area is mostly visited by day-trippers with minimal exposure to the local context, targeted marketing actions and promotional campaigns to increase overnight stays could fill this gap and motivate tourists to taste and purchase local food.

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