

Research Article

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Comparative analysis of alpine agritourism in Trentino, Tyrol, and South Tyrol: Regional variations and prospects

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Abstract: Agritourism is an increasingly popular form of tourism that entails visiting farms to engage in activities and gain insights into the farming way of life. This research explores the economic, social, and environmental dynamics of agritourism in the Tyrol–South Tyrol–Trentino Euroregion with a specific emphasis on the three distinct regional entities in Austria and Italy: the Austrian state of Tyrol (comprising North and East Tyrol) and the Italian autonomous provinces of South Tyrol and Trentino. It addresses two key research aims: uncovering regional distinctions among these Alpine provinces and understanding the motivations, challenges, and future plans of agritourism operators. A comprehensive review of existing literature frames the study, while data collection involves an online survey of agritourism farms in the region. Distinctive characteristics emerge, with Trentino emphasizing restaurant services, sustainability, and community engagement. South Tyrol prioritizes quality accommodations and work–life balance, while Tyrol aligns closer with South Tyrol’s focus. Notably, economic factors exert a substantial influence on their motivations to embrace agritourism, underscoring their pivotal role in this context. Despite facing challenges such as “time management and labour,” “meeting visitors’ expectations,” and “local permits and taxes,” most agritourism operators across the region display willingness to expand their activity in the future. Overall, agritourism in the study area is characterized by significant structural and operational differences resulting in different future public support and regulatory needs.

Keywords: rural tourism, Italy, Austria, comparison, motivations

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1 Introduction

Agritourism can be defined as a form of tourism that involves visiting farms for the purpose of participating in activities, learning about the farming way of life, and enjoying local food and products. In recent times, the notion of agritourism has become increasingly popular as a means of expanding agricultural revenue streams and promoting sustainable rural development [1,2]. Given the growing desire for genuine and distinctive travel experiences, agritourism has emerged as a desirable choice for those seeking to engage with the natural environment, local cultures, and communities [3]. Agritourism has spread rapidly in many countries worldwide, with Italy being a prime example. In Italy, agritourism, or “agriturismo” in Italian, has become increasingly popular since the 1980s [4] and has now become an important sector of the country’s tourism industry. According to the 2022 Agritourism census by the Italian national statistical agency ISTAT, Italy saw a significant increase in agritourism participation between 2007 and 2020, with a growth rate of over 40%. In 2021, there were more than 25,000 active farms involved in agritourism activities. The Italian agritourism sector offers a wide range of experiences, from wine and olive oil tasting to farm stays and outdoor activities, all while showcasing the country’s diverse regional cultures and landscapes.

Definitions of agritourism differ from state to state and depend on policy makers and laws. The initial legal framework for agritourism in Italy was established in 1985 through the enactment of the Law no. 730/1985. This law aimed to promote economic diversification for rural farms by allowing them to offer overnight accommodation to visitors. A subsequent law, the Law no. 96/2006, imposed more stringent regulations on agritourism. This law stipulates that only the farmer and their family members can run an agritourism business, and the farm’s primary activity must remain agricultural in terms of labour hours, even if it does not generate the majority of the farm’s income.

On these premises, this study aims at providing a comprehensive overview of the agritourism sector in the Tyrol–South Tyrol–Trentino Euroregion and potential differences between the three provinces (Tyrol, South Tyrol, and Trentino). The rationale behind selecting Trentino–South Tyrol region as the research focus lies in its prominent status within the Italian agritourism landscape. Being the second territory in Italy with the highest number of agritourism establishments, ranking closely behind Tuscany, and also leading in terms of agritourism density, it offers an ideal setting to explore and analyse the dynamics of this sector (Agritourism census, ISTAT 2022). The inclusion of Tyrol as a case study in this research project is justified by its close association and shared characteristics with Trentino–South Tyrol in terms of agricultural practices and traditions. The Euroregion represents unique cross-border collaboration between the Italian region of Trentino–South Tyrol and the Austrian state of Tyrol, fostering cooperation and synergy in various domains, including agriculture and tourism.

1.1 Thematic focus and industry priority

By exploring the regional differences and development paths, the study addresses an important industry priority. Indeed, it provides relevant information to stakeholders and decision makers at administrative level on the influencing framework conditions and factors that support or hinder the successful management of agritourism. The motivational driving forces to run agritourism services and activities evidence which measures may be undertaken by public and private authorities to successfully steer agritourism. If these support agritourism, they may contribute to maintain mostly small-structured family farms and land use often in marginal rural areas that lack alternative income possibilities. This could keep these areas vital. Moreover, many agritourism farms adopt organic farming that, in turn, also contributes to key biodiversity goals. Other important social aspects concern the self-fulfilment of women who normally manage agritourism on a farm.

1.2 Approach and research questions

Additionally, we want to conduct an in-depth analysis of the present state of agritourism in the area, examining the motivations that drive farmers to embrace this activity, the challenges they encounter, and their future plans. This helps to shed light into the unique characteristics and dynamics of agritourism within the Tyrolean, South Tyrolean, and Trentino Euroregion and provides valuable insights into

the factors that shape the sector's growth and sustainability. To do so, collected farm survey data was analysed by analysis of variance (ANOVA) and Bonferroni *post hoc* tests.

With this analysis, the research aims at answering the following research questions:

RQ1: Which are the differences between agritourism farms in the Tyrol, South Tyrol, and Trentino alpine provinces in economic, social, and environmental terms?

RQ2: Which are the motivations, challenges, and future plans of agritourism operators in the Tyrol–South Tyrol–Trentino Euroregion and do they show regional differences?

In the upcoming section (Section 2), a review of the existing literature concerning economic, social, and environmental dynamics of agritourism is outlined, as well as motivations, challenges, and prospects of the sector. Section 3 describes data collection and method applied, while in Section 4, the obtained results are discussed. Section 5 concludes by highlighting future perspectives and policy implication of the study.

2 Review of the relevant literature

2.1 Theoretical background and link to existing theories

As underlined by a wide range of existing scientific research, agritourism represents an economically driven managerial reaction due to financial constraints that are based on insufficient agricultural income resulting in an important diversification activity. This kind of touristic supplementary on-farm activity (called “broadening,” i.e. operational reorganization and commitment in new business areas) [5–8] can stimulate a farm's economy, increasing income and generating cash flow [9–12].

One common finding across scientific studies is that farmers mainly diversify due to economic reasons [13–15]. For many farmers, agritourism represents a way to supplement their income and diversify their revenue streams. This is particularly important given the fluctuating nature of agricultural products, which can create uncertainty and financial insecurity for farmers [14,15]. In addition, agritourism can provide farmers with a way to make use of underutilized resources such as land, buildings, and equipment.

The combination of agricultural and non-agricultural diversification is a common resilience strategy for small and medium-sized farms in Europe, as it enhances the economic and employment conditions of rural areas [10,16]. By finding

alternative uses for existing resources and marketing them differently from traditional agricultural products, farmers can generate additional income. Agritourism is a particularly effective way to achieve that; in fact, it is confirmed in a wide body of literature that it can stimulate a farm's economy, increasing income and generating cash flow [9–12]. It should be considered that this on-farm diversification needs specific hospitality and communicative expertise and producers have to juggle multiple roles, including deciding which products to invest in and managing marketing channels [17]. Development pattern, intensity, and type of agritourism (businesses) are the result of specific locational, geographic, and touristic contexts (“milieus”) and their embeddedness in particular socioeconomic–political framework conditions [4,18,19]. The longer the presence and history of agritourism in a specific geographic area with legal provisions and a significant overall touristic intensity, the better developed the support schemes and institutional structures, the larger the variety and higher (on average) the infrastructural quality of agritourism establishments (i.e., specific individual diversification strategies).

2.2 Existing practical and scientific knowledge

There is a large body on scientific evidence that provides proof on general, individual, and motivational driving factors that enable or hinder the sustainable development and management of agritourism [14,20–22].

While economic motivations are the primary drivers for many farmers to engage in agritourism activities, social motivations are also important [23–25]. However, these motivations are often secondary to economic considerations. Non-economic motivations encompass a variety of factors, such as choosing to reside in an ideal environment, upholding rural traditions, embracing the challenges of farming, and relishing a high-quality lifestyle [26]. Furthermore, these motivations extend to raising awareness, educating the public about agriculture, and providing visitors with insight into the lives of farmers [27]. Additionally, many farms are family-owned and operated, and agritourism can provide an opportunity for family members to participate in the farm business and generate income. Indeed, as Tew and Barbieri [27] observed, certain motivations revolve around the family unit. Respondents in their study emphasized the significance of agritourism diversification in improving family connections, i.e., enhancing family's quality of life and ensuring the farm's continued

legacy within the family. Creating jobs for family members can also help to promote intergenerational transfer of farm assets and promote the sustainability of family farms [23]. In many cases, younger family members may be more interested in pursuing careers outside of agriculture, and agritourism can provide an opportunity for them to remain involved in the farm business [28].

Challenges in the realm of agritourism are multifaceted and may vary across regions and farm types. In California, a study conducted by Holland and Wolfe [29] identified “dealing with visitors” (interruption of farming and visitor's interaction with animals) as the most significant challenge faced by agritourism businesses. Meanwhile, Pennsylvania-based businesses, as per Ryan et al. [30], grapple with issues such as property tax problems, high insurance and liability costs, and the limitations imposed by seasonality and unpredictable weather conditions. Similarly, Wang et al. [31] revealed that agritourism operators face distinct challenges depending on their geographical location, even if it is evident that operators across various regions of the United States are troubled by agritourism liability concerns, which impacts the way a farm operates in terms of the activities it can offer onsite. Nevertheless, looking at the Western states of the United States, they observed that they struggle with a higher incidence of issues related to regulations, zoning regulations, and obtaining permits. In contrast, operators in the Southern states encounter more difficulties concerning electronic connectivity. In New Jersey, Schilling et al. [32] found that marketing the business posed the most substantial problem, closely followed by concerns regarding liability and the intricacies of customer interactions. Furthermore, Nickerson et al. [14] observed that for production-oriented farms, opening their doors to the public can disrupt daily operational routines if visitor activities are not meticulously designed and controlled in terms of time, space, and visitor numbers. Beus [33] also cautioned that the effort required maintaining a farm's cleanliness, safety, and readiness for public visits can occasionally have adverse effects on primary farm operations, particularly during critical periods such as planting and harvest seasons. The relentless nature of farm work, typically executed with the utmost efficiency, makes it challenging for farmers to alter their routines to accommodate visitors, as noted by Yu and Spencer [25]. Moreover, another significant challenge in the realm of agritourism is the scarcity of dedicated starting capital and labour resources allocated to the development and management of agritourism. While the profit potential of agritourism is recognized, the absence of committed employees who possess the necessary expertise to oversee agritourism activities inhibits its growth [25].

When dealing with agritourism operators' prospects, according to the ISMEA [34] report, the panel of interviewed Italian companies shows increasing confidence. In 2020, 37% of entrepreneurs expressed optimism about the future, whereas in 2021, this figure rose to 42% of those who considered "new opportunities" or relaunching their company with new business strategies. Another substantial portion of entrepreneurs (43%), while remaining confident, maintains a more cautious and conservative attitude. Finally, just over 8% of the respondents have contemplated ceasing their activity, often temporarily suspending one of the main agritourism services (catering and/or accommodation) in favour of strengthening agricultural activities and product sales. Entrepreneurs have often focused on building new markets by seeking new customers and new sales channels (a total of 38% of companies). Nearly a quarter of those surveyed have invested in exploring new forms of communication and promotion with the aim of nurturing relationships with their customers/consumers. Approximately one in four entrepreneurs has also concentrated on expanding their range of products and/or developing new services. In the residual category "others," there are some entrepreneurs (about 14%) who have taken advantage of the emergency to enhance the quality of their offerings and services already present in their company (searching for new collaborators, rethinking guest management protocols, improving the menu, enhancing internet connectivity, etc.) [34].

2.2.1 Economic, social, and environmental dynamics in agritourism farms

Agritourism activities present multifaceted dynamics encompassing economic, social, and environmental dimensions. These aspects interplay to shape the overall impact and sustainability of agritourism ventures. Agritourism is an economic lifeline for many farms, offering interesting financial benefits that can be especially valuable during times of economic distress. It provides an avenue for increased gross income, generating cash flow, and diversifying revenue streams [10–12,35]. Farmers often find that agritourism can help balance the fluctuations in revenue that are characteristic in the agricultural sector, providing stability and additional income [36]. However, it is essential to acknowledge that agritourism can sometimes disrupt traditional agricultural activities. Tourists, while seeking unique experiences, may inadvertently interfere with everyday farm operations. Farmers may need to make organizational and infrastructural adjustments to accommodate tourists' special requests, which can pose challenges in maintaining the smooth functioning of

agricultural activities. This disruption, although a potential challenge, underscores the need for farmers to find a delicate balance between their agricultural responsibilities and the demands of agritourism [37–40].

Beyond its economic impacts, agritourism has a profound influence on the social fabric of rural communities. While it does demand extra time and effort, it often brings considerable personal satisfaction to farmers. Sharing their farm life with visitors can be an enriching experience, and the opportunity to meet new people through their agritourism business can be socially rewarding [2,41,42]. However, it is essential to recognize that running an agritourism business can also have drawbacks. Farmers are often on duty 7 days a week, which can be challenging and affect work load of women and family life [16,43]. Moreover, agritourism empowers women in rural communities, offering them opportunities for leadership roles, self-confidence development, and a chance to challenge traditional stereotypes depicting farm women as "incomplete farmers" [44]. The success of women in agritourism often evolves around gaining recognition and respect as farmers, positioning themselves as experts in their respective fields [45–49]. Agritourism also plays a crucial role in shaping and preserving farmer identity. Despite the diversification into tourism activities, farmers still see themselves as farmers at their core [44,47,50]. Farmers frequently cite this close bond with farming and the local environment as a primary source of motivation, seeing agritourism as a means of safeguarding their livelihoods as well as preserving these traditions. At the local level, agritourism enhances education, preserves cultural traditions, and contributes positively to community life. It provides networking opportunities, promotes in marketing local products, boosts the local economy, increases job availability, and enhances overall resident satisfaction [41,51–54]. These aspects highlight the role of agritourism in fostering stronger, more vibrant rural communities.

The impact of agritourism extends beyond economics and social factors; it also plays a pivotal role in environmental sustainability. Farmers over-average adopt eco-friendly measures to cater to tourist preferences for safe and healthy farm produce [55]. These measures can include reducing chemical and pesticide use, implementing integrated pest management strategies, and enhancing wildlife habitats [28,56–58]. Additionally, farmers exhibit a strong inclination towards embracing environmentally friendly practices, such as water conservation, recycling, and educating visitors on conservation practices [40,59,60]. Farmers are increasingly conscious of their resource consumption, using local materials for infrastructure development, installing solar panels for energy production, and implementing recycling programmes [53,61,62]. This heightened awareness

of environmental responsibility has positive impacts on biodiversity, landscape preservation, and natural resource conservation [63]. Furthermore, the presence of tourists can inspire farmers to reduce their ecological footprint. Sustainable farming practices, organic agriculture, and a focus on regenerating resources for sustainability in agritourism have become central themes for many agritourism ventures [55,64]. There is no clear picture of the reasons of these eco-friendly practices, but, generally, they seem to meet tourist preferences and contribute to both the economic and ecological sustainability of agritourism activities.

2.3 Research gap

The spatial effect, i.e., the regional differences, has seldom been addressed by researchers. Recently, Wang et al. [31] described the challenges agritourism operators face in the different regions of the United States with a regression analysis. Belliggiano et al. [65] compared, through Index Decomposition Analysis, Italian and Spanish regions for their number of tourist arrivals, nights spent in the accommodation, and the capacity of tourist accommodation establishments. Finally, Karampela et al. [66] analysed, in two different areas of Greece, the perceptions of agritourism and cooperation from actors in the sector using text mining and sentiment analysis. However, to the best of our knowledge, no research dealt with the Tyrol–South Tyrol–Trentino Euroregion area.

2.4 Rationale and approach

Comparing existing literature and theories, the present research investigates different territories and incorporates a distinct set of variables. The novelty of the study lies in the description of important regional characteristics and differences in the north of Italy and Tyrol, which improve the understanding of the sector. Furthermore, giving impression on the future plans of agritourism operators, the study provides new empirical insights on how sustainable concerns are considered when steering their businesses. This is the first research that systematically compares agritourism in the Tyrol–South Tyrol–Trentino Euroregion, providing decision-making support for thousands of agritourism farms in the region. Our study delves into the intricate nuances of agritourism within the Tyrol–South Tyrol–Trentino Euroregion, emphasizing the significance of acknowledging gaps in knowledge to foster comprehensive understanding and informed decision-making. By uncovering the motivations,

challenges, and future trajectories of agritourism operators across the alpine provinces, we contribute to bridging the practical and theoretical divides in this field. Furthermore, our inquiry not only illuminates the existing landscape of agritourism but also offers pathways to bridge the gaps between what is known and unknown.

The next section provides an overview of the literature dealing with the economic, social, and environmental aspects linked to agritourism, relevant to the present analysis.

2.5 Agriculture and agritourism in the Tyrol–South Tyrol–Trentino Euroregion

Trentino–South Tyrol is an autonomous region of Italy situated in the northern part of the country amid the Dolomites Alps, and it shares borders with Austria and Switzerland. It is one of five regions in Italy that are autonomous with a special statute, which allows them some legislative, administrative, and financial power to a varying extent, in order to take into account cultural differences and protect linguistic minorities. The region comprises two autonomous provinces, Trento and Bolzano, with a combined population of 1.1 million. Tyrol is one of the federal states of Austria, bordering the Italian region of Trentino–South Tyrol, with a population of 760,105. The three together (Tyrol, South Tyrol, and Trentino) form the Tyrol–South Tyrol–Trentino Euroregion (Eurostat, 2022) (Figure 1).

In the Italian Trentino–South Tyrol region, there were, in 2020, a total of 34,259 farms, 20,023 of those farms were in South Tyrol and 14,236 were in Trentino. These farms cover a total utilized agricultural area (UAA) of 361,872 hectares, of which 240,085 are in South Tyrol and 121,787 in Trentino. There has been a documented decline in the

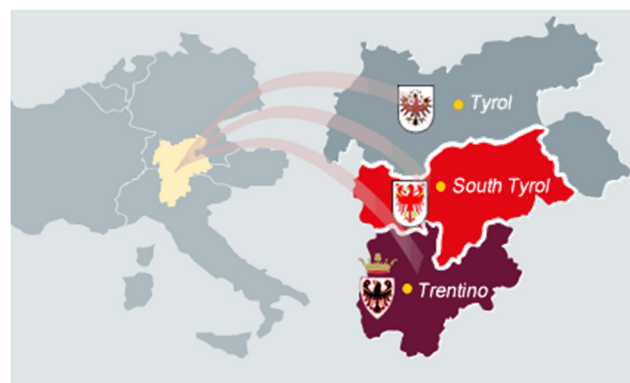


Figure 1: Map of the Tyrol–South Tyrol–Trentino Euroregion (source: press office of the autonomous province of Trentino).

number of farms by -1% in South Tyrol and -13% in Trentino between 2010 and 2020. The three main agricultural activities in the region are represented by apple growing (10,665 farms, 31% of the total), grape growing (10,026 farms, 29% of the total), and dairy farming (6,506 farms, 19% of the total), generally at a higher altitude (Agricultural census, ISTAT 2021). In South Tyrol, fruit growing brings in an average yearly farm revenue (standard output) of €33,400, while dairy farming generates €23,700 annually. The share of full-time farmers is 43% in fruit growing and 50% in dairy farming. Overall, 99.7% of all farms earn less than €100,000 per year (ASTAT 2016).

In the Austrian region of Tyrol, there are over 15,000 farms: about 4,200 of these are run as full-time farms and the remaining 9,200 are managed as part-time farms or other legal entities like associations or cooperatives. The primary farming activity, accounting for over 58% of the value of agricultural output, is animal husbandry. The main focus of animal husbandry is dairy farming and breeding livestock [47].

The number of agritourism farms in Trentino–South Tyrol saw a steady increase from 2,990 in 2010 to 3,749 in 2021 in absolute values, of these 3,253 are situated in South Tyrol and 496 in Trentino. In South Tyrol, 1,634 agritourism farms are part of the local association “Red Rooster,” whereas in Trentino, 282 are part of the local association “Agritur Trentino.” Accommodation is offered by 3,136 agritourism farms (84% of the total, of which 2,897 in South Tyrol and 375 in Trentino), accounting for a total of 32,663 beds (27,313 in South Tyrol and 5,305 in Trentino), with an average of 9.4 beds per farms in South Tyrol and 14.1 in Trentino. Restaurant services are offered by 807 agritourism farms (20% of the total, of which 605 in South Tyrol and 202 in Trentino), with a total of 14,172 seats (6,697 in South Tyrol and 7,475 in Trentino). Finally, 1,148 farms (30% of the total, of which 1,039 in South Tyrol and 109 in Trentino) offer other types of activities; the most common are hiking and tastings. Just 605 agritourism farms (15% of the total, of which 482 in South Tyrol and 123 in Trentino) are run by women (Agritourism census, ISTAT 2022). In Tyrol, according to the data published by Bundesministerium (2022) [67], there are 892 agritourism farms with a total of 7,129 guest beds, with an average of 8.6 beds per farm, of which 350 companies are members of the association “Urlaub am Bauernhof” (Table 1). In general, farm holiday activities include (1) the lodging of guests in buildings on the farm site; (2) the serving of food and beverages at the farm premises (“Hofschank”), including farm-made wines (in which case it is called “Buschenschank”); (3) the organization of leisure, educational, sports, hiking,

Table 1: Descriptive statistics of agriculture and agritourism in the Tyrol–South Tyrol–Trentino Euroregion

	Trentino	South Tyrol	Tyrol
No. of farms	20,023	14,236	~15,000
No. of agritourism farms	496	3,253	892
No. of agritourism farms that are part of the local association	282	1,634	350
No. of total beds	763	7,716	7,129
No. of beds per agritourism farm	14.1	9.4	8.6

riding, and cultural activities; and (4) the organization of tastings of agricultural products produced on-site and in the surrounding area [4].

3 Methods

3.1 Sampling and data collection

This study utilized an online survey to collect data from agritourism farms in the Tyrol–South Tyrol–Trentino Euroregion. Originally, a database of 1,890 e-mail addresses was compiled from a variety of public sources, such as professional associations and social media platforms. Between April and July 2022, an e-mail invitation has been sent to all contacts in the database. A summary of the study and a link to the online Survey Monkey questionnaire were included in the invitation. Participants received several reminders in an effort to increase the response rate and guarantee a more representative sample. Additionally, participants were urged to spread the survey link among their contacts. The survey consisted of multiple-choice and open-ended questions and was designed to be user-friendly and accessible on any device with internet access. The data collected through the survey were anonymous, and participants were informed of the purpose of the study and their rights as participants. To ensure the quality and accuracy of the collected convenience sample, various validation checks were built into the survey software. The questionnaire focused on three key dimensions: economic, capturing vital financial details such as income, investments, and production metrics; social, exploring farmers’ quality of life and community interactions; and environmental, addressing sustainable practices as organic farming and conservation measures. Additionally, it covered farm and household specifics as farmers’ gender and age, farm size, number of employees, and agritourism activities offered. Questions on motivations to start agritourism, challenges encountered, and future plans of operators were also included.

3.2 Explorative and descriptive statistical analysis

ANOVA is a widely employed statistical technique with a rich history, initially developed by Sir Ronald A. Fisher in the early 20th century. It is commonly utilized to determine whether statistically significant differences exist among the means of a continuous outcome variable across all groups or levels under investigation [68]. At its core, ANOVA decomposes the total variability present in the data into two distinct components: variability between groups and variability within groups [69]. The primary statistical metric at play in ANOVA is the F -test, also known as Fisher's F -test. This test serves as the pivot for determining whether the observed differences in means among groups are statistically significant. The F -test calculates an F -statistic by dividing the variance attributed to differences between group means (referred to as mean square between or MSB) by the variance found within individual groups (known as mean square within or MSW). Mathematically, it can be expressed as

$$F = \text{MSB}/\text{MSWF}.$$

This test assesses the overall hypothesis and does not provide information about which specific groups exhibit differences from one another. When the overall F -test produces a statistically significant p -value, pairwise comparisons between groups, analysing them two at a time, can be considered.

The F -statistic follows an F -distribution, and the critical value from this distribution is compared to the calculated F -statistic to assess the statistical significance of the group differences. However, when conducting multiple statistical tests simultaneously or examining numerous group comparisons, there is an increased risk of encountering type I errors, also known as false positives. To counteract this issue and maintain an overall family-wise error rate at the desired level, a *post hoc* correction method is often employed. Within the spectrum of approaches for conducting multiple comparisons following ANOVA, Bonferroni's procedure stands out as the most conservative, especially if the goal is to perform all pairwise group comparisons. It is also the most commonly used method to mitigate the risk of false-positive results [70]. The Bonferroni method involves the use of a more stringent individual alpha level for each comparison within a group of tests. Its purpose is to maintain the overall study-wide error rate at 5% and, consequently, to manage the risk of obtaining false-positive results when, in reality, there are no genuine differences between groups. Instead of applying the conventional 5% alpha level, the

Bonferroni adjustment dictates that the alpha level for each specific comparison should be set at 5% divided by the total number of such comparisons [71].

4 Results and discussion

4.1 Demographic characteristics

The total number of respondents was 470, equal to a 25% response rate. After data cleaning, the final sample consisted of 229 completed questionnaires, which were then analysed using the statistical software SPSS.

Agritourism in Trentino and South Tyrol has distinct focuses and characteristics (Table 2). In Trentino, the emphasis is on restaurant services, attracting a higher number of annual visitors; also, the region's agritourism is closely connected to crop agriculture, offering activities as vineyard tours. Additionally, agritourism establishments in Trentino tend to employ more external staff members to cater to the needs of visitors. In contrast, South Tyrol and Tyrol's agritourism places a stronger emphasis on accommodation, often offering luxurious amenities such as pools and saunas. The involvement of more family members in farm operations creates a welcoming atmosphere. Livestock agriculture is prominent in South Tyrol and Tyrol, providing opportunities for visitors to observe and interact with animals. Agritourism establishments in South Tyrol and Tyrol typically rely more on family labour rather than external employees.

4.2 Economic dynamics

According to the findings in Table 3, economically, the three provinces exhibit statistically significant differences in terms of share of agricultural income in total income, investment satisfaction, income change, and production value (€) change. These differences suggest that these provinces may have distinct economic profiles and experiences in these areas.

Trentino stands out with the highest share of agricultural income in total income, accounting for a substantial 71%. This percentage significantly surpasses the corresponding figures for South Tyrol and Tyrol, which stand at 64% and 42%, respectively. This substantial variation in the share of agricultural income implies that Trentino relies significantly more on agriculture as a primary source of income

Table 2: ANOVA and Bonferroni *post hoc* tests between groups per province of origin for agritourism demographic variables

Demographic variables	South Tyrol (n = 153)	Trentino (n = 56)	Tyrol (n = 20)	F statistics
Restaurant service (1 = yes, 0 = no)	0.12 ^a	0.39	0.12 ^a	12.99***
No. of visitors per year	404.83 ^a	1360.91	344.00 ^a	9.335***
No. of family members living at the farm	4.41 ^a	3.28	4.40 ^a	10.47***
Type of farm (1 = with livestock, 0 = without)	0.67 ^{ab}	0.52 ^a	0.90 ^b	5.15***
No. of apartments	3.05 ^a	3.29 ^a	2.00	5.08***
Accommodation (1 = yes, 0 = no)	0.77 ^a	0.57 ^b	0.65 ^{ab}	4.30**
Quality rating category (1, 2, 3, 4, 5) ^d	3.27 ^a	3.76 ^b	3.50 ^{ab}	3.13**
Altitude (m)	908.17 ^a	773.63	1015.35 ^a	3.86**
Gender (1 = female, 0 = male)	0.15 ^a	0.29 ^b	0.25 ^{ab}	2.68*
No. of family members working at the farm	2.67 ^a	2.45 ^a	3.05 ^a	2.35*
No. of employees working at the farm	0.46 ^a	0.71 ^a	0.00 ^a	1.74
Part of marketing association (1 = yes, 0 = no)	0.79 ^a	0.67 ^a	0.72 ^a	1.39
“Luxury” services (e.g. pools and sauna) (1 = yes, 0 = no)	0.35 ^a	0.23 ^a	0.35 ^a	1.29
Deviation from mean utilized agricultural area (UAA) (%)	-2.79 ^a	15.12 ^a	14.76 ^a	0.94
Distance from town (km)	13.60 ^a	4.75 ^a	5.36 ^a	0.59
Marital status (1 = married, 0 = otherwise)	0.83 ^a	0.87 ^a	0.90 ^a	0.55
University degree (1 = yes, 0 = no)	0.09 ^a	0.12 ^a	0.05 ^a	0.53
Years of farm activity	18.29 ^a	19.69 ^a	17.25 ^a	0.47
Age group (1, 2, 3, 4) ^e	2.68 ^a	2.77 ^a	2.70 ^a	0.46
No. of employees working in agritourism	0.48 ^a	0.64 ^a	0.06 ^a	0.41
No. of family members working in agritourism	2.54 ^a	2.16 ^a	2.00 ^a	0.09

^{a,b}Means with same superscripts indicate non-statistically significant differences. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$. ^d1 = lowest quality rating category, 5 = highest quality rating category. ^e1 = 18–24 years, 2 = 25–44 years, 3 = 45–64 years, 4 = over 64 years.

compared to the other two provinces. Conversely, Tyrol appears to have a more diversified income structure, with a lower dependence on agriculture.

A closer look at investment satisfaction scores reveals that both Trentino and Tyrol share higher average scores, registering at 3.67. In contrast, South Tyrol exhibits a slightly lower satisfaction score of 3.26. Although all provinces express a degree of satisfaction with farm investments, the statistically significant difference underscores that South Tyrol may have opportunities for improvement in this

aspect when compared to its counterparts in Trentino and Tyrol.

The analysis of income change during the past 5 years unveils significant disparities among the provinces. Trentino records the highest positive income change of 0.37, indicating substantial income growth for a significant portion of agritourism operators. Tyrol also experiences positive income change, although at a lower rate of 0.10. In contrast, South Tyrol reports the lowest income change of 0.02, suggesting that income changes were relatively modest in this

Table 3: ANOVA and Bonferroni *post hoc* tests between groups per province of origin for economic variables

Economic variables	South Tyrol (n = 153)	Trentino (n = 56)	Tyrol (n = 20)	F statistics
Share of agricultural income in total income (%)	64.42 ^a	71.30 ^a	42.33 ^b	0.001***
Investment satisfaction (1, 2, 3, 4, 5) ^d	3.26 ^a	3.67 ^b	3.67 ^{ab}	0.007***
Income change (-1, 0, 1) ^e	0.02 ^a	0.37 ^b	0.10 ^{ab}	0.027**
Production value (€) change (-1, 0, 1) ^e	-0.06 ^a	0.25 ^b	0.00 ^{ab}	0.058*
Share of agritourism income in total agricultural income (%)	42.93 ^a	38.56 ^a	41.37 ^a	0.575
Investment change (-1, 0, 1) ^e	0.52 ^a	0.38 ^a	0.60 ^a	0.357
Production quantity change (-1, 0, 1) ^e	0.11 ^a	0.32 ^a	0.16 ^a	0.118
Income satisfaction (1, 2, 3, 4, 5) ^d	3.31 ^a	3.45 ^a	3.37 ^a	0.324

^{a,b}Means with same superscripts indicate non-statistically significant differences. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$. ^d-1 = declining; 0 = no change; 1 = increasing during the past 5 years. ^e1 = very dissatisfied, 2 = dissatisfied, 3 = neither dissatisfied nor satisfied, 4 = satisfied, 5 = very satisfied.

province. The pronounced variation in income change highlights Trentino's economic dynamism, as it has witnessed the most substantial improvement in income levels among the three provinces. One reason may be that his province also has the highest number of visitors per year and is more focused on offering restaurant service (Table 2).

Analysis of production value change showcases a different trend. Trentino is the only province to report positive production value changes (0.25), indicating some level of growth in this sector. In contrast, South Tyrol and Tyrol demonstrate a negative or zero production value change of -0.06 and 0.00 , respectively, hinting at a decrease in production value for some of their farms. This significant difference in production value change suggests that South Tyrol and Tyrol have encountered challenges in maintaining or increasing its production value, potentially reflecting economic difficulties in the agricultural sector. In contrast, Trentino has managed to maintain a slightly growing production value.

4.3 Social dynamics

According to the findings in Table 4, socially, the three provinces exhibit statistically significant differences in terms of free time, interaction with the local community, farmer identity, family time, and conflicts with neighbours.

Operators in Trentino generally report having less available free time and family time compared to their counterparts in South Tyrol. It is reasonable to assume that the higher number of visitors per year in Trentino

and the significant higher share of restaurant services offered could contribute to the reported differences in free time and family time between the two provinces. The demand for restaurant services may result in a busier schedule and less personal time for the families managing agritourism establishments in Trentino. In contrast, agritourism establishments in South Tyrol, which focus more on accommodation and have a strong family involvement, may have a different dynamic. Additionally, agritourism farms in Trentino exhibit a higher level of interaction with the local community that correlates with the reported decrease in personal time for them. Engaging with the local community often requires additional time and effort, such as participating in community events, collaborating with local businesses, or being involved in community initiatives. On the other hand, the increased interaction with the local community may also contribute to a lower number of conflicts with neighbours in Trentino. By actively engaging at the community level, agritourism farms with gastronomy may foster positive relationships and open lines of communication with neighbouring farms and residents. Gastronomy farms are in fact interconnected in a supply-bound network, largely influenced by provincial regulations mandating a specific percentage of offered products that has to be regionally sourced (Art. 4, provincial law October 30 2019, n. 10). This can lead to a better understanding of each other's needs, mutual support, and potential conflict resolution. The positioning of agritourism farms in Trentino at a significant lower altitude and non-significant lower distance from the next town (Table 2) compared to farms in South Tyrol and Tyrol can contribute to an easier interaction with the community.

Table 4: ANOVA and Bonferroni *post hoc* tests between groups per province of origin for social variables

Social variables	South Tyrol ($n = 153$)	Trentino ($n = 56$)	Tyrol ($n = 20$)	F statistics
Free time (1, 2, 3, 4, 5) ^d	2.34 ^a	1.79	2.35 ^a	6.82 ^{***}
Interaction with local community (1, 2, 3, 4, 5) ^d	3.01 ^a	3.45	3.25 ^a	5.90 ^{***}
Farmer identity (1, 2, 3, 4, 5) ^e	3.92 ^a	4.29 ^b	4.10 ^{ab}	3.90 ^{**}
Family time (1, 2, 3, 4, 5) ^d	2.90 ^a	2.40 ^b	2.56 ^{ab}	3.75 ^{**}
Conflicts with neighbours (1, 2, 3, 4, 5) ^d	3.13 ^a	2.81 ^b	2.95 ^{ab}	3.52 ^{**}
Presence of a farm successor (1 = yes, 0 = no)	0.51 ^a	0.30 ^b	0.55 ^{ab}	3.92
Partner involvement (1, 2, 3, 4, 5) ^d	3.80 ^a	3.78 ^a	3.57 ^a	0.31
Partner job outside the farm (1 = yes, 0 = no)	0.36 ^a	0.32 ^a	0.50 ^a	0.58
Partner involvement satisfaction (1, 2, 3, 4, 5)	3.91 ^a	3.76 ^a	4.00 ^a	0.68
Family situation satisfaction (1, 2, 3, 4, 5) ^g	4.22 ^a	4.14 ^a	3.90 ^a	1.57
Relations with local community and neighbour satisfaction (1, 2, 3, 4, 5) ^g	3.89 ^a	3.71 ^a	3.90 ^a	1.42

^{a,b}Means with same superscripts indicate non-statistically significant differences. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$. ^{d1} = strongly decreased, 2 = decreased somewhat, 3 = neither decreased nor increased, 4 = increased somewhat, 5 = strongly increased. ^e“At our farm, we feel like ‘real’ farmers”: 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree. ^{g1} = very dissatisfied, 2 = dissatisfied, 3 = neither dissatisfied nor satisfied, 4 = satisfied, 5 = very satisfied.

The data also reveal that agritourism operators in Trentino have a significant stronger farmer identity compared to those in South Tyrol. This observation can be attributed to the fact that agritourism farms offer fewer luxury services, such as pools and saunas (Table 2), and they have a higher share of agricultural income in total income (Table 3). These factors may contribute to a stronger connection to traditional farming practices, a sense of authenticity, and a reaffirmation of the operators' farmer identity.

4.4 Environmental dynamics

According to the findings in Table 5, environmentally, the three provinces exhibit statistically significant differences in terms of water conservation, organic production, active reduction of waste, integrated pest management, biodiversity satisfaction, number of livestock, and wildlife conservation.

Agritourism farms in Trentino demonstrate a higher adoption rate of organic farming practices, waste reduction measures, and integrated pest management, and report greater satisfaction with farm biodiversity compared to agritourism farms in South Tyrol and Tyrol, indicating a greater interest in environmental practices. On the other hand, South Tyrol agritourism farms exhibit a stronger focus on water conservation techniques. This difference in environmental practices adoption could be correlated with the fact that

Trentino agritourism farms have a significantly higher representation of women running the activity (Table 2), who can be more sensitive to environmental issues according to the literature [72–75]. Their influence and perspectives can shape decision-making processes and encourage a stronger focus on environmental performance.

The results identify notable regional distinctions among the alpine provinces within the Tyrol–South Tyrol–Trentino Euroregion (Figure 2). These differences reflect the unique character and priorities of each province's agritourism offerings.

Trentino stands out for its commitment to providing exceptional restaurant services to visitors. In addition, Trentino places a strong emphasis on implementing sustainable agricultural practices, showcasing its dedication to environmental stewardship, and excels in fostering meaningful interactions with the local community. Furthermore, Trentino is the province that relies more on agriculture as a primary source of income and that experienced in the past 5 years the most substantial shifts in income and production value within the area.

In South Tyrol, the focus pivots primarily toward offering quality accommodations, a choice that allows agritourism operators to enjoy more personal and family time, creating a better work–life balance.

Tyrol, while situated somewhat in the middle, exhibits a closer similarity to South Tyrol in terms of its emphasis on accommodations and lifestyle aspects.

Table 5: ANOVA and Bonferroni *post hoc* tests between groups per province of origin for social outcomes

Environmental variables	South Tyrol (<i>n</i> = 153)	Trentino (<i>n</i> = 56)	Tyrol (<i>n</i> = 20)	<i>F</i> statistics
Water conservation (1 = yes, 0 = no)	0.59	0.39 ^a	0.15 ^a	9.14 ^{***}
Organic production (1 = yes, 0 = no)	0.19 ^a	0.43 ^b	0.20 ^{ab}	6.50 ^{***}
Active reduction of waste (1 = yes, 0 = no)	0.41 ^a	0.61	0.20 ^a	5.98 ^{**}
Integrated pest management (1 = yes, 0 = no)	0.33 ^a	0.50	0.15 ^a	4.67 ^{**}
Biodiversity satisfaction (1, 2, 3, 4, 5) ^e	3.83 ^a	4.04 ^{ab}	3.92 ^b	4.09 ^{**}
No. of livestock (1, 2, 3, 4, 5) ^d	3.16 ^a	3.62 ^b	3.06 ^{ab}	3.32 ^{**}
Wildlife conservation (1 = yes, 0 = no)	0.27 ^a	0.27 ^{ab}	0.05 ^b	2.42 [*]
No. of pets (1, 2, 3, 4, 5) ^d	3.23 ^a	3.27 ^a	3.10 ^a	0.53
Chemical inputs (1, 2, 3, 4, 5) ^d	2.48 ^a	2.23 ^a	2.44 ^a	0.83
Renewable energies (1 = yes, 0 = no)	0.75 ^a	0.68 ^a	0.65 ^a	0.72
Native plant propagation and protection (1 = yes, 0 = no)	0.28 ^a	0.20 ^a	0.40 ^a	1.64
Biodiversity increase (1 = yes, 0 = no)	0.40 ^a	0.39 ^a	0.50 ^a	0.37
Animal welfare satisfaction (1, 2, 3, 4, 5) ^e	4.10 ^a	4.16 ^a	4.25 ^a	0.38
Renewable energy satisfaction (1, 2, 3, 4, 5) ^e	3.94 ^a	3.88 ^a	4.05 ^a	0.29
Water management satisfaction (1, 2, 3, 4, 5) ^e	3.88 ^a	3.67 ^a	3.85 ^a	1.42
Waste management satisfaction (1, 2, 3, 4, 5) ^e	3.83 ^a	3.85 ^a	4.00 ^a	1.42

^{a,b}Means with same superscripts indicate non-statistically significant differences. **p* < 0.10; ***p* < 0.05; ****p* < 0.01. ^d1 = strongly decreased, 2 = decreased somewhat, 3 = neither decreased nor increased, 4 = increased somewhat, 5 = strongly increased. ^e1 = very dissatisfied, 2 = dissatisfied, 3 = neither dissatisfied nor satisfied, 4 = satisfied, 5 = very satisfied.

4.5 Motivation for diversification, challenges, and future plans

Correspondingly with the literature reported in section 2.2, the significance of economic factors is further underscored by our findings in Table 6. The data reveal that the primary motivation for individuals and families to embark on agritourism ventures is the desire to generate additional income. This motivation reflects a clear recognition of the financial benefits that agritourism can bring to farm operations. Following closely behind, the motivation to address agricultural income fluctuations ranks as the second most important factor. This highlights the practicality of agritourism as a means to stabilize income in a sector often subject to the uncertainties of weather, market fluctuations, and other agricultural variables. Moreover, the motivation to optimize farm resources emerges as another crucial driver. This demonstrates a strategic approach to leveraging existing assets and infrastructure to diversify revenue streams through agritourism activities. Collectively, these findings affirm that economic considerations play a pivotal role in the decision to enter the agritourism sector.

Giving respondents space to write down additional motivations that were not present in the options, they highlighted as reasons the possibility of taking over the business from parents and passing on the farming tradition to children and grandchildren.

Table 6: Degree of importance for the motivations behind starting the agritourism activity

Motivations	Mean	Std. Dev.
Additional income	4.49	0.57
Fluctuations in agricultural income	4.03	0.83
Better use of farm resources	4.00	0.88
Sharing farm life with visitors	3.75	0.97
Raising public awareness of agricultural issues	3.71	1.03
Creating jobs for family members	3.60	1.04
Subsidies and tax incentives	3.08	1.04

All items are measured using a scale of: 1 = very unimportant, 2 = unimportant, 3 = neither unimportant nor important, 4 = important, 5 = very important.

When examining the differences between provinces (Table 7), it becomes evident that the motivation of seeking additional income is significantly more pronounced for agritourism farms in South Tyrol and Tyrol when compared to those in Trentino. This observation aligns with the economic environment of the three regions, where Trentino stands out with the highest share of agricultural income in total income, the most substantial income change, and a positive production value (€) change, as indicated in Table 3. On the other hand, raising public awareness of agricultural issues as a motivation for starting agritourism is significantly more important for agritourism farms in Trentino compared to that in South Tyrol and Tyrol. This finding

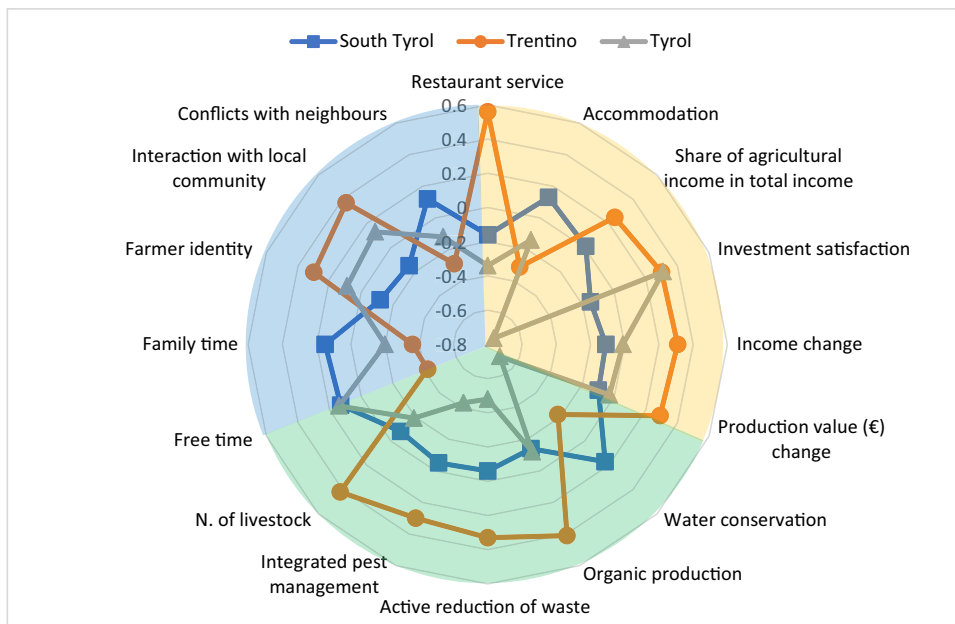


Figure 2: Radar chart showing differences between agritourism farms in South Tyrol, Tyrol, and Trentino provinces; variables reported are those tested as significant and were standardized.

Table 7: ANOVA and Bonferroni *post hoc* tests between groups per province of origin

Motivations	South Tyrol (n = 153)	Trentino (n = 56)	Tyrol (n = 20)	F statistics
Additional income	4.54 ^a	4.26	4.67 ^a	5.61***
Raising public awareness of agricultural issues	3.58 ^a	3.98 ^b	4.00 ^{ab}	3.33**
Fluctuations in agricultural income	4.11 ^a	3.80 ^b	4.00 ^{ab}	2.31
Sharing farm life with visitors	3.68 ^a	3.98 ^a	3.62 ^a	1.69
Better use of farm resources	3.92 ^a	4.17 ^a	4.13 ^a	1.64
Subsidies and tax incentives	3.02 ^a	3.20 ^a	3.25 ^a	0.76
Creating jobs for family members	3.55 ^a	3.76 ^a	3.56 ^a	0.69

^{a,b}Means with same superscripts indicate non-statistically significant differences. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

suggests that agritourism farms in Trentino recognize the importance of educating the public about agricultural practices and their broader impact on the environment, as suggested in the previous paragraph.

Among the challenges reported by the respondents (Figure 3), three prominent ones emerged, as also cited by the literature reported in paragraph 2.2.: “time management and labour,” “meeting visitors’ expectations,” and “local permits and taxes.” Notably, when respondents were given the opportunity to provide additional challenges not listed as options, a recurring concern that surfaced was the difficulty in finding qualified personnel. This unanticipated challenge underscores the importance of addressing staffing and skills-related issues in the context of agritourism, as it can significantly impact the sector’s success and visitor experience. This aspect is likely of greater interest to agritourism businesses that offer catering services, as it is an activity that requires a larger number of workforces.

The data reveal that local permits and taxes are selected as a challenge by agritourism farms in Trentino more frequently compared to agritourism farms in South Tyrol and Tyrol (Table 8). This difference in perception may be attributed to regional policies and regulations that impose specific requirements or fees on agritourism activities in Trentino. These regulations could result in agritourism operators in Trentino facing more administrative hurdles and financial obligations related to permits and taxes compared to their counterparts in South Tyrol and Tyrol. The provincial regulation in Trentino (Art. 4, provincial law October 30 2019, n. 10) from 2022 requires that at least 70% of the products served come from Trentino and 20% must be self-produced. This may pose challenges, especially for high-altitude agricultural or livestock-focused farms. On the other hand, competition from other touristic options in the area is selected significantly more by agritourism farms in South Tyrol compared to that in Trentino. This finding aligns with the

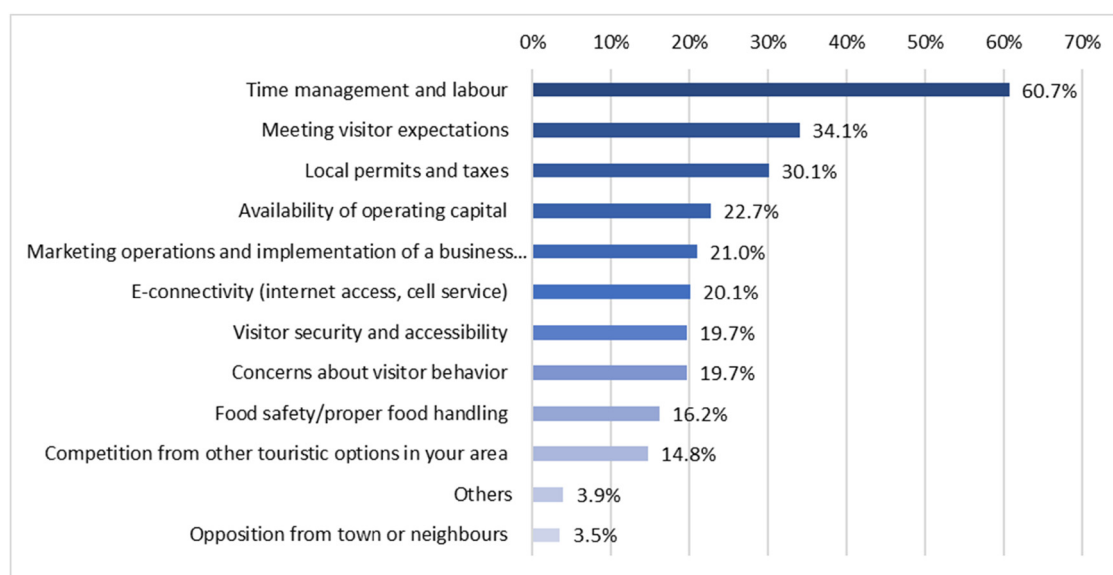
**Figure 3:** Main challenges faced by agritourism operators.

Table 8: ANOVA and Bonferroni *post hoc* tests between groups per province of origin for challenges faced by agritourism farms

Challenges	South Tyrol (n = 153)	Trentino (n = 56)	Tyrol (n = 20)	F statistics
Local permits and taxes	0.26 ^a	0.48	0.10 ^a	7.19***
Competition from other touristic options in your area	0.18 ^a	0.04 ^b	0.20 ^{ab}	3.82**
Availability of operating capital	0.24 ^a	0.27 ^a	0.00	3.35**
Marketing operations and implementation of a business plan	0.22 ^a	0.27 ^a	0.00	3.29**
Visitor security and accessibility	0.18 ^a	0.18 ^a	0.40	2.91*
E-connectivity (internet access, cell service)	0.16 ^a	0.30 ^b	0.20 ^{ab}	2.53*
Time management and labour	0.63 ^a	0.55 ^a	0.55 ^a	0.70
Concerns about visitor behaviour	0.18 ^a	0.23 ^a	0.25 ^a	0.60
Others	0.04 ^a	0.05 ^a	0.00 ^a	0.56
Opposition from town or neighbours	0.03 ^a	0.05 ^a	0.05 ^a	0.53
Meeting visitor expectations	0.33 ^a	0.39 ^a	0.30 ^a	0.47
Food safety/proper food handling	0.17 ^a	0.16 ^a	0.10 ^a	0.32

^{a,b}Means with same superscripts indicate non-statistically significant differences. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

discussion in the previous paragraph, where it was mentioned that agritourism farms in Trentino have higher levels of interaction with the local community and experience fewer conflicts with neighbours (Table 4). This emphasis

on community engagement likely contributes to a more cooperative and supportive environment, reducing the perceived threat of competition from other tourism offerings. The stronger competition from other touristic options in

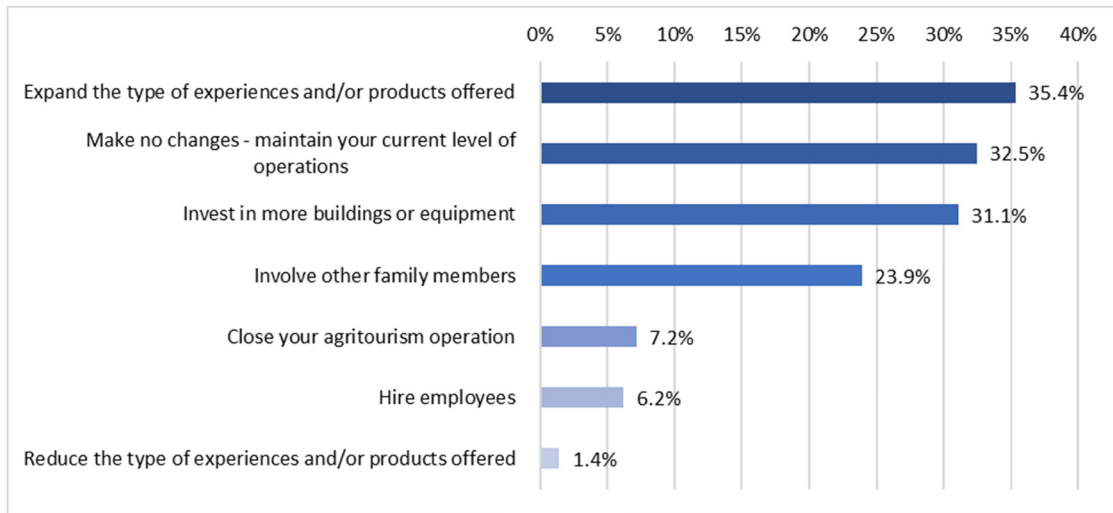


Figure 4: Future plans of agritourism operators.

Table 9: ANOVA and Bonferroni *post hoc* tests between groups per province of origin for future plans of agritourism operators

Future plans	South Tyrol (n = 153)	Trentino (n = 56)	Tyrol (n = 20)	F statistics
Hire employees	0.04 ^a	0.12 ^b	0.00 ^{ab}	3.54**
Reduce the type of experiences and/or products offered	0.01 ^a	0.04 ^a	0.00 ^a	1.50
Invest in more buildings or equipment	0.29 ^a	0.37 ^a	0.25 ^a	0.89
Make no changes – maintain your current level of operations	0.33 ^a	0.30 ^a	0.45 ^a	0.71
Close your agritourism operation	0.08 ^a	0.04 ^a	0.10 ^a	0.82
Involve other family members	0.25 ^a	0.20 ^a	0.20 ^a	0.46
Expand the type of experiences and/or products offered	0.35 ^a	0.36 ^a	0.25 ^a	0.44

^{a,b}Means with same superscripts indicate non-statistically significant differences. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

South Tyrol suggests that the region may have a wider range of tourist attractions or alternative leisure activities available; in fact, this province has a higher number and density of agritourism farms compared to the neighbouring Trentino, as described in section 2.3. This increased competition could present a challenge for agritourism farms in South Tyrol, as they need to differentiate themselves and attract visitors amidst a diverse array of tourism options.

Overall, the future plans of agritourism farms (Figure 4) demonstrate a strong willingness to keep agritourism at the core of their operations and actively pursue growth opportunities. Notably, 35% of operators express a desire to diversify the range of experiences and products offered, while 31% intend to make investments in additional buildings or equipment. Moreover, a substantial 33% express contentment with their existing level of operations and have no immediate plans for alterations. Only 1.4% of respondents plan to reduce the activities offered, and 7% are considering closing the agritourism business.

When examining the future plans of agritourism operators in South Tyrol, Trentino, and Tyrol, the only significant distinguishing factor among them is the intention to hire employees (Table 9). This option is selected significantly more by agritourism farms in Trentino compared to that in South Tyrol. This difference in intention to hire employees may be correlated with the fact that agritourism in Trentino is more focused on restaurant services (Table 2), which typically require additional staff to cater to the needs of visitors, as previously discussed. Additionally, the data reveal that agritourism farms in Trentino already have a higher number of external employees compared to agritourism farms in South Tyrol (Table 2). This indicates that Trentino farms may already recognize the need for additional workers to support their operations. Moreover, as previously stated, when respondents were given the opportunity to provide additional challenges that were not included in the given options, many highlighted the difficulty in finding qualified personnel. This further supports the notion that agritourism farms in Trentino face challenges related to recruitment and staffing.

5 Conclusion

The primary objective of this study was to offer valuable insights into the economic, social, and environmental dynamics of agritourism within the Tyrol–South Tyrol–Trentino Euroregion and its three territorial subdivisions (Tyrol, South Tyrol, and Trentino). We have examined the distinct characteristics of each alpine province, shedding light on the motivations, challenges, and future plans of agritourism operators. Our findings demonstrate that agritourism serves

as a crucial diversification strategy for small and medium-sized farms, contributing to social and environmental sustainability in rural mountain areas. Our results also reveal the significant influence of regional–spatial socioeconomic differences on agritourism dynamics. While economic factors were the driving force behind agritourism engagement, we also observed nuanced regional variations. Trentino places a strong emphasis on providing on-farm restaurant service, implementing sustainable agricultural practices, and fostering meaningful interactions with the local community, while in South Tyrol, the focus is primarily on offering quality accommodations, allowing operators to enjoy more personal and family time. Tyrol, while somewhat in the middle, exhibits a closer similarity to South Tyrol in terms of its emphasis on accommodation and lifestyle aspects. The structure of agritourism farms, particularly the provision of gastronomic and accommodation services, significantly influences the operators' needs and perceptions, showcasing the diverse strategies employed within the Euroregion to meet these varying demands. Despite facing challenges such as time management, meeting visitor expectations, and addressing local permits and taxes, agritourism operators across the region display a willingness to expand their activities in the future. This resilience and determination to overcome obstacles predicts well for the continued growth and development of the regional agritourism sector.

In summary, agritourism in the Tyrol–South Tyrol–Trentino Euroregion is characterized by significant structural and operational differences resulting in different future public support and regulatory needs. In South Tyrol, future agritourism development priorities are likely to deal with accommodation challenges, while in Trentino, emphasis will probably be placed on further enhancing the gastronomy sector. In fact, the current South Tyrolean political tourism discussion is focused on limiting future accommodation capacity in the province to better control overtourism damage risks [76]. In Trentino, the promotion of local culinary specialities also within the agritourism marketing channel is already high on the provincial agenda, as previously discussed, and further efforts in these directions can be expected. As agritourism evolves and adapts to changing consumer preferences and sustainability concerns, it remains a dynamic force for rural development and a source of authentic travel experiences that celebrate the rich traditions and natural beauty in the heart of the Alps.

One limitation of this study is the absence of qualitative data, which would enhance the discussion on the economic factors influencing agritourism motivations. Delving into specific economic factors through interviews or case studies can offer a richer understanding of their impact on agritourism operators in the region. Future research in this

field is recommended to adopt a mixed-methods approach, integrating qualitative methodologies with quantitative analyses for a more profound understanding of the complexities involved.

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Ethics statements for human participant research: There was no ethics or institutional committee in place at the researcher's institution at the time the study was conducted. Permission to conduct the interviews for the purposes of this research was obtained by all respondents, who were fully informed about the purposes of this research and how their responses would be used and stored.

Data availability statement: The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

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