

ANALYSIS OF OPTIONAL QUALITY TERM (OQT): MOUNTAIN LABEL FROM PRODUCER'S PERSPECTIVE: STUDY OF MOUNTAINOUS COUNTIES SURROUNDING BRAȘOV, ROMANIA

Kiran MAINALI¹, Felix H. ARION², Cătălina ROGOZAN³

¹L'Ecole supérieure des agricultures. Master of Science Food Identity. Angers, France. E-mail: kmainali11111@gmail.com

²University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, Department of Economic Sciences, 3-5 Mănăștur St., 400372, Cluj-Napoca, Romania, E-mail: felixarion@usamvcluj.ro

³Highclere Consulting (HCC), Brașov, Romania. E-mail: catalina@highclere-consulting.com

Corresponding author: felixarion@usamvcluj.ro

Abstract

Mountain products have been introduced in the EU supplemented with governing regulations to mainstream the products originating from mountain areas with adequate market facilities and use as a differentiating tool compared with conventional products. Since its formalisation and adoption of relevant laws in the national context in Romania, the adoption of the optional quality term Mountain Label among the producers has been astonishing. Considering the good market in Romania for quality and locally sourced products, mountain labels and their use among the producers were regarded as having a better impact on the economic and market status. The research intended to pursue an answer in the same direction to see if producers were able to fully exploit the EU optional quality term Mountain Label scheme at the national level in Romania or if there was dissatisfaction among the producers with the rules of utilizing the label. A general producer survey with questionnaires was planned, organized, and implemented on the three mountain massifs surrounding Brașov city to elicit the necessary findings. Due to continuous support from the relevant authorities in the registration of the label, the producers were interested in enlisting themselves in the quality scheme; however, poor marketing and promotional assistance were some of the problems identified as general problems that caused the producers to be disappointed in the labelling scheme. Although most of the producers had a good idea of the benefits associated with the label, only 50% of them were engaged in some way in highlighting the mountain label in their promotional activities. Different statistical tests like the U-test, correlation analysis, and chi-square tests were used in conjunction with the different findings visualisations to derive insightful findings. The findings of the research can be beneficial to comprehend existing scenarios of mountain labels and producers' perceptions of mountain labels post-registration, propose different systematic reformations for better efficiency of operations of mountain labels, and realize its initial objectives.

Key words: mountain label, producer, perception, EU, Romania

INTRODUCTION

The Romanian mountains face myriad difficulties and challenges because of their mountainous landscape attributes like steep slopes, altitude, higher agriculture costs, and food production costs. The mountain regions in Romania are also highly characterized by rapid depopulation and lower productivity [1]. Also, contemporary consumers are willing to pay a higher price for a high-quality product with a well-known source of origin [8]. In attempt to compensate for the adversity faced by the mountain producers as a consequence of the geographical constraints and supply authentic mountain products to the consumers

without misappropriation, mountain labels in the EU were effectuated to increase the competitiveness of the traditionally predominant mountain farming system. The use of mountain labels on mountain products can be an opportunity for mountain producers to enable them to receive premium prices for the products [20]. As there exists limitation on the research of the suitability of the labels from the producer's perspective, the relevance of the present study highlights the existing state of mountain labels execution in Romania taking a reference region of mountainous counties surrounding Brașov region.

According to EU Regulation No.1151/2012, the term 'mountain product' is established as an optional quality term [16]. This term is exclusively applicable to designate products meant for human consumption as outlined in the Treaty, under the conditions that:

(a) The raw materials and feedstuffs for farm animals primarily originate from mountain areas.

(b) For processed products, the processing itself occurs within mountainous areas.

In Romania, the specific legislation pertaining to the use of the Optional Quality Term "Mountain" label is validated by the following two regulations. [15].

-The Decision No. 506 of July 20, 2016 for the institutional framework and measures to apply the Commission Delegated Regulation (EU) No 665/March 11, 2014 [7] supplementing Regulation (EU) No 1151/2012 of the European Parliament and of the Council concerning to the conditions of using the optional quality term "mountain product," governing the framework for certification, verification, and control.

-The order of the Minister for Agriculture and Rural Development no. 52/2017 [11] for endorsing the procedure for verifying the conformity of data in the task book for acquiring the privilege to use the optional quality term "mountain product" and for assessing compliance with both European and national legislation by the economic operators granted the right to use this optional quality term, amended by the Order no. 321 of September 28, 2017.

Elementary and fundamental conditions that the producers and economic operators must satisfy before registering their products on the mountain registry are:

a) The geographical area must be a mountain area as specified as the delimited area according to the National Rural Development Program 2014-2020.

b) A mountain product must be designed for human consumption, under the following conditions:

-The primary source of raw materials, as well as fodder for farm animals, must originate predominantly from mountainous areas.

-For processed products, the processing must also occur within mountainous areas.

Romania is the sole country that does not implement derogations based on geographical location distance as specified in the European Commission Article 31(1)(b) of Regulation (EU) No 1151/2012 and Article 1(1) and (2) of Regulation (EU) No 665/2014.

As observed, there is high upward trend in the process of registration of mountain label certification by the producers in Romania. One such reason is due to the robust operationalization of the National Agency of the Mountain Areas (ANZM), which has been functioning in collaboration with producers, making them realize the mountain products' utilities and benefits, which has led to a better understanding of the scheme among the producers [6]. In order to completely capitalize on the locally available resources, the Romanian authorities needs to play crucial role in assisting the mountain producers facilitating in certification with national and international recognition like mountain labels [18].

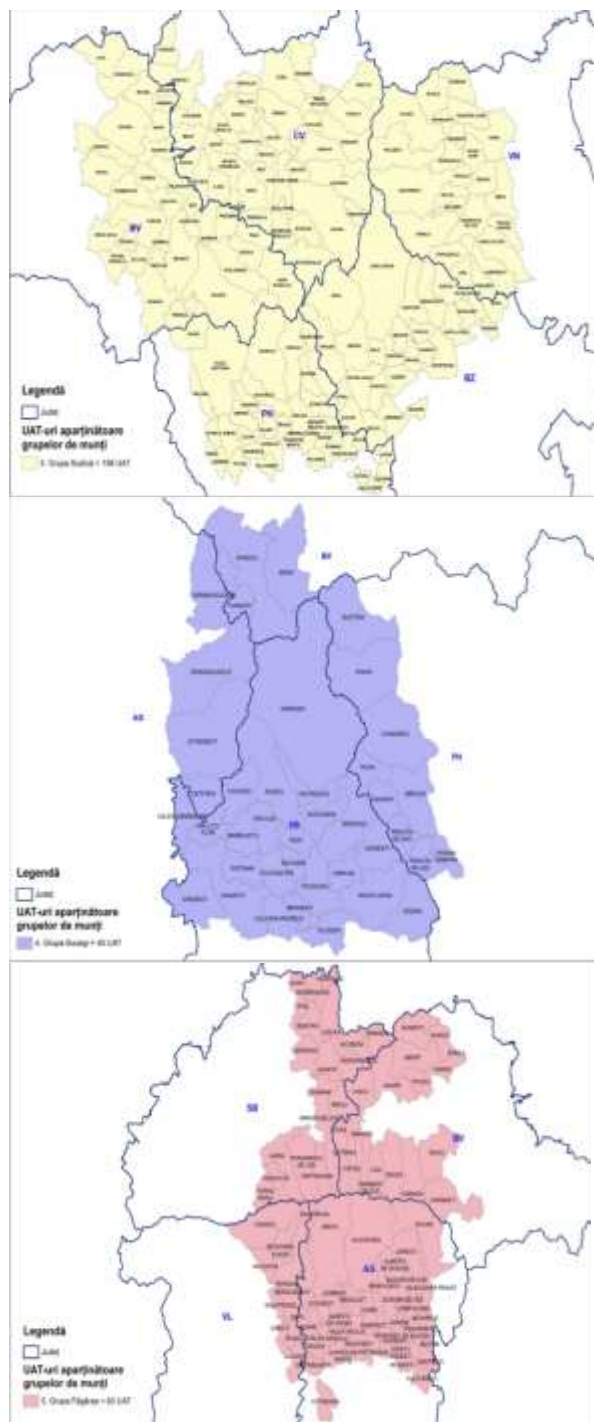
The objective of the research is to pursue an answer in the same direction to see if producers were able to fully exploit the EU quality scheme Mountain Products at the national level in Romania or if there was dissatisfaction among the producers with the rules of utilizing the label.

MATERIALS AND METHODS

As the registration of mountain labels in Romania has been on steady rise through the years after the enactment of the legislation and all governing regulations, there has been limitation on research conducted to assess the perception of the producers post-registering to the optional quality scheme.

The elementary purpose of this analysis and research is to identify the existing state of the mountain label registration in Romania, observing the pattern of registration variation over the years, understand the more dominant product category registered and the counties which have shown been at the forefront in terms of registering in the optional quality scheme. Similarly, on the other hand, the

research had more comprehensive approach of assessing the impact of labels on the registered producers.



Map 1. Map of the study area: Făgăraș, Bucegi, and Sudiță massifs
Source: [12].

The framework for the research to was adopted through different available study [19] and implemented to local context. For this, a study of producer was conducted on the nearby mountain massifs namely the

registered producers in the three mountain massifs adjacent to Brașov – namely: Făgăraș, Bucegi, and Sudiță massifs. An initial screening of the communes was done, to eliminate any superimposing communes with other mountain massifs. The screenshot of the mountain massif used in the analysis is represented in the Map 1.

The existing database of the mountain producers registered with the entitlement to use the optional quality term: Mountain label was retrieved and analyzed from the website of National Agency of the Mountain Areas (ANZM). The study employed descriptive and inferential statistics. There are mainly levels of precision (sampling error) and confidence to be considered while designing the sample size during quantitative research [7].

Therefore, attempts were made to minimize this error by selecting adequate number of producers as respondents to contribute in the research.

Excel was used for general data arrangement and visualization, while the R 4.3.0 binary software package was employed for the majority of data analysis, visualization, and computation of the statistical tests.

RESULTS AND DISCUSSIONS

Initial analysis of mountain areas and products in Romania

According to the Order of MADR and MRDPA No. 97/2019 (MADR and MRDPA, 2019), [10], 948 land administrative units (LAU) in Romania were included in the category “mountain townships” distributed across 27 counties Common Order MADR no. 97 and MDRAP no. 1332/2019 as shown in Figure 1 [9].

Statistically, among the 27 counties officially designated as having mountain areas, Hunedoara (69), Harghita (65), and Caraș Severin (55) record the highest number of mountainous townships, while Timișoara (5) and Gorj (12) have the lowest count of mountain townships within their counties. There are a total of 948 Local Administrative Units (LAUs), comprising 835 communes, 83 cities, and 29 municipalities. Additionally,

there is one city compound recognized in the county of Sibiu.

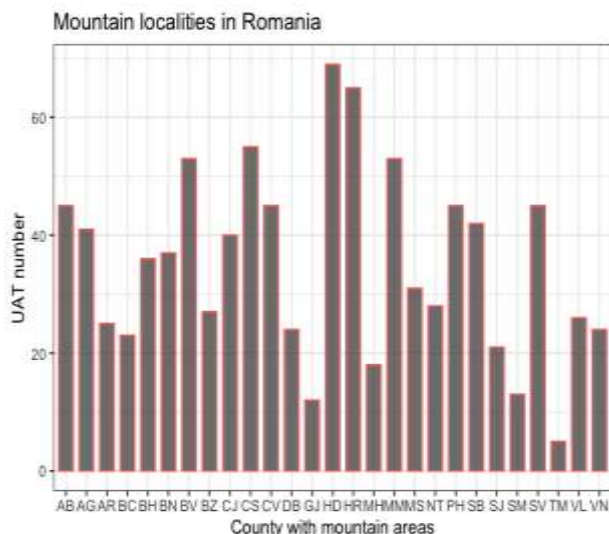


Fig. 2. Number of mountain localities by county in Romania

Source: Own determination based on the information from [13].

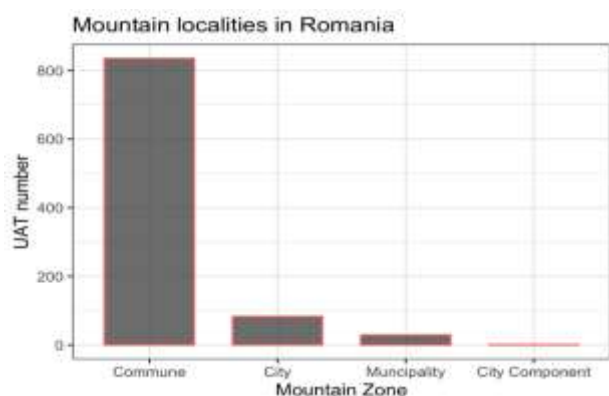


Fig. 3. Mountain localities by classification type
 Source: Own Determination based on the information from [13].

The latest version (April 2023) accessible of the Excel sheet made available on the National Agency of the Mountain Area (ANZM) website was retrieved from the source for the underneath analysis conducted. As per the information retrieved from the analysis of the mountain product database made available by the ANZM, in the National Register of Mountain Products there are registered 3,703 products under 8 specific identified product categories.

The initiation of the process of registration of mountain products in the mountain registry commenced in 2017, with only a few producers (9) exhibiting their interest in the

registration of 30 mountain products. Registration slowly picked up in 2018 as the adaptation of the Mountain Law was institutionalized.

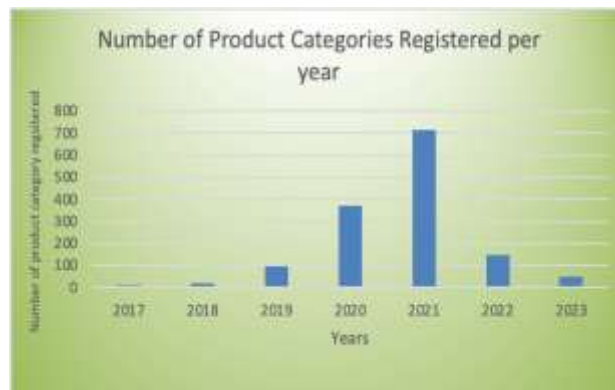


Fig. 4. Number of product categories registered in the period 2017-2023*

Source: Own determination based on the data from [14].

In the year 2018, the registration of mountain products almost doubled, with the total producers (17) registering almost 50 products under various product categories. In the year 2019, with a clear distinction of the mountain areas made as per the Order of MADR and MRDPA No. 97/2019, the registration of the products scaled new heights, with 97 producers onboard registering 379 more products in the year 2019, making the total cumulative number of 459 registrations at the end of the year 2019. The following year, 2020, saw exponential growth in the count of producers, with an additional 369 producers under different product categories, enlisting 1,084 products. The year 2021 has been the record year in terms of registration of mountain products with the right to use the optional quality term (OQT): mountain label, as a total of 714 individual product categories were registered by the producers, resulting in 1,608 new product registrations, increasing the cumulative registration of the product till 2021 to 3,151 products, as also indicated in the graph. From the year 2022 on, a sharp plunge in the total product categories and producers registered can be observed. In the year 2022, only 148 individual producers recorded their products on the registry, increasing the total number of products registered to 3,603. In the year 2023, till the

data was analyzed and recorded, the progress of registration of mountain products has been on a declining trend, with a mere 47 new producers registering a total of 100 new products under different product categories, resulting in a total of 3,703 products registered.

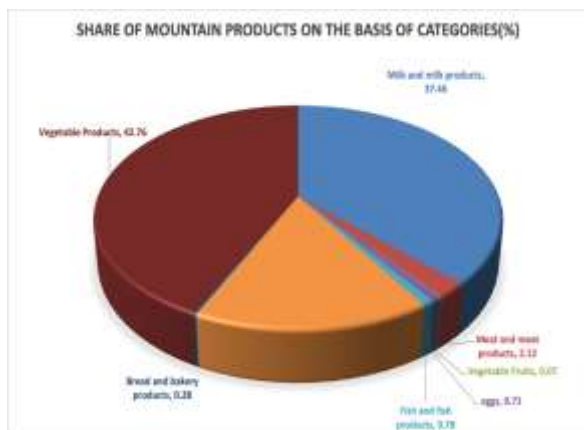


Fig. 5. Share of Mountain Products by category
 Source: Own determination based on the data from [14].

On the basis of mountain product categories registered until the year 2023, as shown in Fig. 5, we may notice that vegetable products dominate the overall registration of mountain products in different counties in Romania. Following that, milk and milk products constitute 37.46%, with 530 producers registering the products. The least share of the mountain registration is attributed to vegetable and fruits (0.07%), bakery (0.28%), eggs (0.71%), and fish products (0.78%). Meat and meat-related products also have a low share (2.12%). The meat industry in the mountain region of Romania is import-dominated [17].

Meanwhile, Covasna County (20%) with the acronym CV as indicated in Figure 6 has the highest share of registration with 275 products recorded in the national registry, followed by Bistrița Năsăud (211).

Similarly, the least product category registered was noticed in four respective counties: Timiș (1), Bihor (7), Mehedinți (7), and Dâmbovița (8). Two counties, Arad and Sălaj, delimited as counties with mountain townships, had no products registered in the database at the moment when the data were retrieved and analyzed (Figure 6).

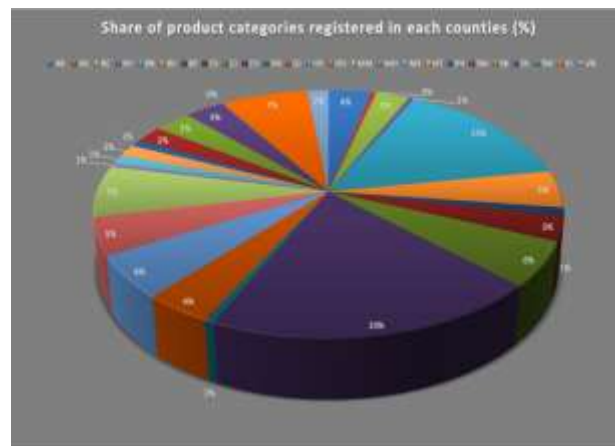


Fig. 6. Share of the registered mountain products registered by county till 2023
 Source: Own determination based on the data from [14].

Producer Survey: To assess the impact of the mountain label in Romania

The producer survey research was planned, developed, and organized with the overall ambition to comprehend the producer's perception of the OQT term mountain label after being formally registered in Romania. Out of 1,400 producers registered in Romania, 216 producers were shortlisted and contacted as per the study area.

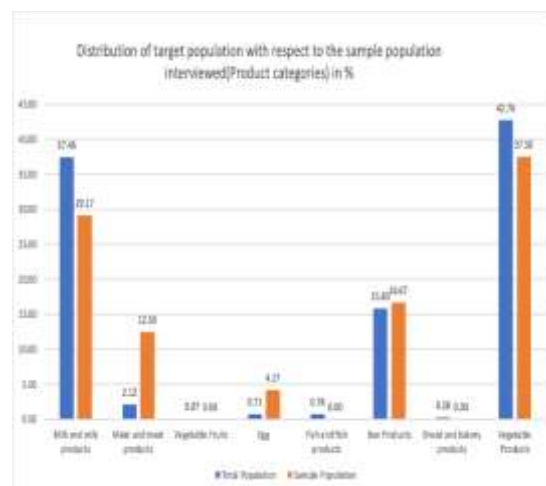


Fig. 7. Comparative representation of the total producers with the sample respondents by product category
 Source: Own determination based on the data from National Agency of the Mountain Area.

Data from **24 producers** who responded were finally analyzed and reported. A general distribution of the producers who participated with the proportion of total registration is shown in Figure 7.

The data presented in Table 1 clearly indicated that the majority of the respondents were male (58.33%) followed by female (41.67%), distributed with an age range between 25 and over 65. The majority of the producers' respondents were in the age range of 35 to 44 (37.5%) of the sample population

Table 1. Summary Statistics of the socio-demographic and economic characteristics of the respondents

Gender	Frequency	Percentage (%)
Male	14	58.33%
Female	10	41.67%
Age	Frequency	Percentage (%)
18-24	0	0.0
25-34	6	25%
35-44	9	37.5%
45-54	4	16.7%
55-64	4	16.7%
65 +	1	4.2%
Production activity	Frequency	Percentage (%)
Production	12	50%
Processing	2	8.33%
Both production and processing	10	41.67%

Source: Own calculation based on field survey, 2023.

Concerning the production activity, 50% of the producers who responded were engaged in production activities, 41.67% related to both production and processing-related activities, and the rest, 8.33%, were processors who were handling raw materials originating from other producers.

Time Length of use of the OQT term: Mountain label in Romania

Most of the producers (66.7%) who took part in the survey were registered with the mountain label for a duration of 1-3 years, whereas 16.67% of the respondents who took part in the survey had been registered in the national mountain product registry recently (less than a year) (Figure 8).

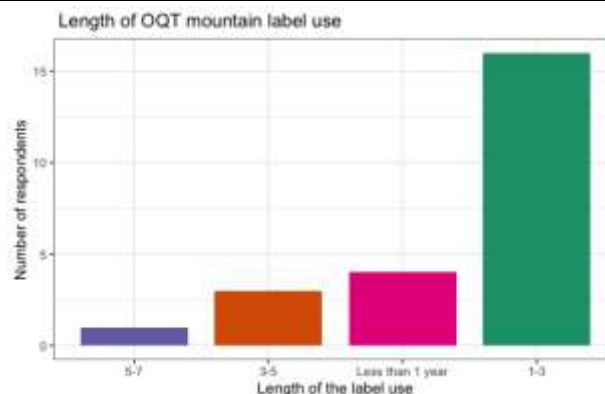


Fig. 8. Distribution of the sample respondents on the basis of length of OQT mountain label use (years)
 Source: Own determination based on the field survey, 2023.

The other 12.5% (3-5 years) and 4.2% (5-7 years) of the sample respondents from the pool of producers had more experience working with the label as they had been registered in the database for a long time.

Producer's Motivation to join the Mountain label scheme in Romania

As the selection of more than one option was permitted in this question, most of the respondents (54.2%) mentioned increasing the sales of the products as their motivation to sign up for this voluntary certification. 41.7% of the responses were aimed at obtaining a competitive advantage from the market and increasing consumer confidence in the products by conveying clarity on the origin of the products. An interesting observation was made on the responses, as 20.8% of the producers were encouraged to register their product with the mountain label scheme in Romania to largely benefit from several rural development schemes, whereas 16.7% of the responses were motivated to increase the product quality and to use the label as a promotional and marketing medium to stimulate the sales of the mountain products. Other reasons mentioned by the producers were to avail themselves of the VAT reduction or fiscal benefits that are imposed on the trading of mountain-labelled products in Romania. Similarly, cheap label to acquire compare to other labels and easy regulations were other identified motivations.

Producer's satisfaction assessment with three essential criteria: Certification process, Rules related with utilization of

the label and promotional and marketing support of the mountain registered products in Romania

As shown in the consolidated bar chart displayed in Figure 9, most of the mountain producers were completely satisfied (87.5%) with the process of certification, whereas 4.17% were partially satisfied with the certification process and standard set up by the related government institutions. A strange point to observe in this case was that no dissatisfaction was expressed at all by the producer respondents. Most of the respondents mentioned the ease of the certification scheme with less paper work, and the support and assistance provided by the state competent authorities as some of the factors that made the process of acquiring the certification a more convenient and seamless experience. This result strongly coincides with the remarks made by [3], where it is pointed out that the support and assistance from the national agencies employed have resulted in an upward trend in the certification of mountain products in Romania.

Similarly, strong satisfaction (87.5%) was noticed in the producer's experience in terms of rules related to the regulations and utilization of the label, and the rest (12.5% of the producers who responded) preferred to be neutral. Easiness and relaxed rules were some of the reasons identified by the producers that can be attributed to the label being a voluntary certification mechanism. However, when the respondents were asked to evaluate their satisfaction level with the support they are receiving from the state or relevant authorities in the promotion or marketing of the mountain-labelled products, mixed responses were observed, with 25% of the producers completely satisfied and 16.67% partially satisfied with the efforts from the state supporting agencies. Almost 34% of the mountain producers who took part in the survey were dissatisfied partially or completely with the support they were receiving to market their mountain products, while the other 25% preferred to be neutral in this case. On asking the reasons for their dissatisfaction, some of the respondents pointed out that the centralized mountain

label-related authorities need to be more active in promotional activities.

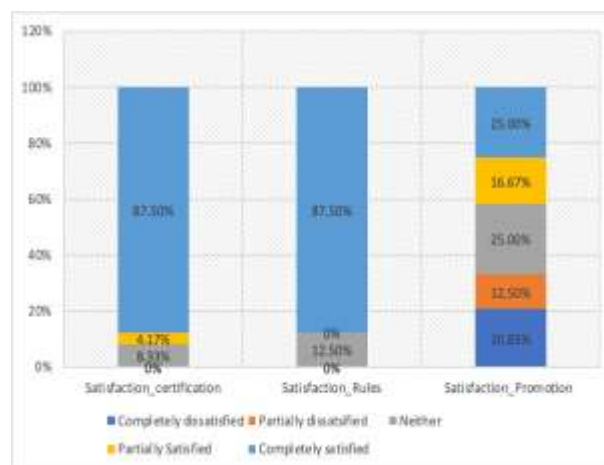


Fig. 9. Evaluation of the satisfaction from the mountain producers

Source: Own determination based on field survey, 2023.

From the stacked bar chart provided by Figure 10, it can be seen that the producers who were relatively new to using the label (i.e., less than 1 year or in between 1-3 years) were 50% satisfied (completely or partially) with the state marketing support on the registered mountain products, while the producers who had been using the label for 3-5 years of time duration were 66.67% completely dissatisfied with the support from the state on the promotional activities as shown in the figure. The producer with over 5 years of experience in the use of labels preferred to be neutral in this case.

A Fisher's Exact Test for Count Data was done to verify if there is any correlation between the length of use of the label and the marketing and promotional support rendered by the state institutions using a bivariate table. Here, a Fisher's exact test was done in the process of analyzing the dependence of the data, as some of the contingency tables of the expected frequencies were below 5, Fisher's exact test is highly recommended as a replacement for the chi-square test when at least one cell in the contingency table of the expected frequencies was below five [2]. A two-tailed test confirmed the rejection of the null hypothesis ($p = 0.4544, >0.05$), stating there is no correlation or dependence between the variables as reflected in the bivariate table.

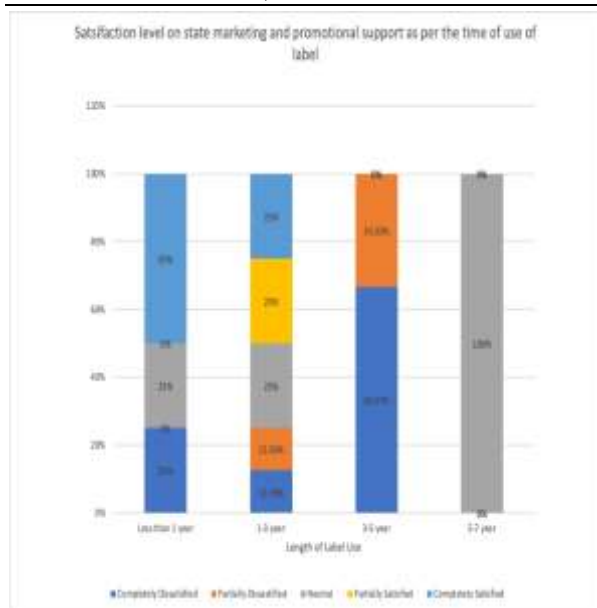


Fig. 10. Satisfaction level on state marketing and promotional support as per the time of use of label
 Source: Own determination based on the field survey, 2023.

From the pool of respondents interviewed, only 50% of the respondents highlight mountain labels in their marketing and promotional activities, while the other 50% have registered in the mountain products database in Romania but have exhibited no interest in highlighting the labels on their products. When asked about some of the platforms or channels they usually use to promote their products with the mountain label, 33.33% of the total respondents said they use food fairs and exhibitions and the internet as their primary medium to promote their products with the mountain label. Similarly, only 12.5% of the respondents said they use the label clearly indicated on the label to promote and market their product on the market.

Producer perceived benefits/issues study

All the respondents who participated in the survey were asked to evaluate some of the pre-defined statements related to the OQT: Mountain label according to their experiences. A five-point Likert agreement scale (1 = completely disagreed, 2 = partially disagreed, 3 = neutral, 4 = partially agree, 5 = completely agree, 0 = cannot evaluate) was employed to draw out the responses from the producers on how they perceive the registration of OQT: Mountain Label in Romania has helped their cause. As most of the producers had never

used the mountain label highlighted in their product, there are 0 values where they have not evaluated any of the statements. For uniformity and reliability in the data, the average value in this case for the statement was computed by purging the values with 0.

Table 2. Summary of the average value of the responses of perceived benefits/issues

Benefits/ issues	- Average_ Total	Length of the label used			Highlighters		
		Less than 1 year	1-3 year	3-5 year	5-7 year	Yes	No
Strengthened your product identity	3.71	3	3.90	3	4	4.00	2.67
Increase in sales prices of the product	2.71	1	2.91	4	1	3.00	1.67
Increases in consumer assurance of the product	4.08	n/a	4.09	5	3	4.18	3.50
Increased awareness of the mountain products among consumers	4.31	n/a	4.36	5	3	4.36	4.00
Differentiated strategies from competitors in the market	3.62	n/a	3.55	5	3	3.91	2.00
Higher perceived costs than benefits	2.07	1	2.18	1	3	2.18	1.67

Source: Own calculation base on the responses given by the interviewees.

Here, the first five pre-defined statements were positively formulated, while the last sixth statement was negatively formulated. From the table presented above, it can be understood that most of the mountain producer respondents believed that the registration of the mountain label had enhanced the mountain product's identity in general. This finding aligns with the remarks of [21] where they feel mountain products symbolize traditional practices related to the

cultural identity of local communities and specific cultural areas. However, while evaluating the contribution of the mountain label to increasing the sales of the products, the producers were not that sure and decided to place themselves in the middle section (neutral with an average value of 2.71). This clearly points out the need to expedite the promotion-related activities related to the mountain label, which were also earlier explained by the respondent producers. Nevertheless, producers firmly assert that the mountain label has played a significant role in fostering consumer confidence in their products. It has led to heightened awareness and served as a distinctive tool to compete effectively with other conventional products in the market. This aligns with the conclusions of [4], where they emphasize that the term "mountain product" facilitates trustworthy communication of the mountain origin of products, thereby enhancing assurance and awareness. For the sole negatively formulated statement, the producers rated it with a value of 2.07, which falls in the category of partially satisfied, which means that the producers believe that mountain-labelled products have more perceived benefits compared to costs in Romania if utilized properly.

In terms of analyzing the data on the basis of length of label use, most of the values of the responses were close to each other, where for the first five positively framed statements, most of the producers were in agreement with them, except for the criteria of increase in sales of the product, where most of the respondents except the one using the label for 3-5 years were in disagreement or preferred to stay neutral. Meanwhile, for the sole negatively formulated statement, the mountain producers were in disagreement, which alludes to the fact that mountain label products have higher benefits compared to the costs incurred. The free charge associated with the costs of registration of the mountain products can be attributed to this, as some of the respondents believe it is a cheaper label to acquire compared to others in Romania. Also, in regard to the highlighting of the mountain label, for the positively formulated statement,

the highlighters had higher agreement in general than the non-highlighters, whereas on the contrary, for the negatively formulated statement, the condition was just the reverse, as shown in the table above.

Similarly, a correlation matrix was obtained with the help of the software, which showed the strong dependency between the relationships between all of the pre-defined statements. correspond with their responses in the case of these two statements. Except in all of the other statements (p values less than 0.05), a strong correlation was observed, which means a strong dependency between the variables as an alternative hypothesis is accepted.

A strong dependency between the statements means that if the mountain producers identify more with one set of statements, they also do similar responses with the other statement, and vice versa.

Furthermore, a correlation matrix with the values of the correlation coefficient derived from the software is presented in the figure below, which shows significance at different confidence levels (Figure 11).

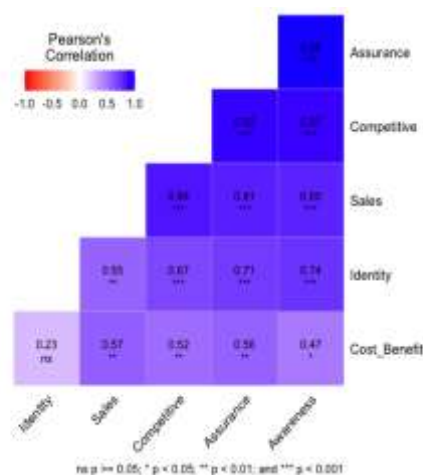


Fig. 11. Correlation coefficients matrix between the statement to check the dependences

Source: Own results based on the received responses.

Wilcoxon Mann Whitney U test to evaluate the difference in opinion between highlighters versus non-highlighters

As the mountain producer's respondents highlighting the mountain label and non-highlighters had different levels of agreement with the pre-defined six statements, it was therefore important to find out if the two

independent groups, highlighters and non-highlighters of the mountain label, perceived the responses separately or not.

A consolidated table with the test of normality of the data, the Saphiro-Wilk test, was computed using the software and reported in Table 3.

Table 3. Test for normality of the data and Wilcoxon Man Whitney U-test

Benefits/Issues	Saphiro-Wilk test for normality of the data (p>0.05)		Wilcoxon rank sum test with continuity correction		
	W	p-Value	Value of W	Selected value of W	P-value
Strengthened your product identity	0.76908	0.004259	130	14	0.000493 6
	0.56662	5.729e-05	14		
Increase in sales prices of the product	0.85134	0.03814	128	16	0.000770 9
	0.54746	4.045e-05	16		
Increases in consumer assurance of the product	0.77335	0.004737	131.5	12.5	0.000297 1
	0.48573	1.389e-05	12.5		
Increased awareness of the mountain products among consumers	0.64844	0.0002806	128.5	15.5	0.000459 6
	0.48661	1.41e-05	15.5		
Differentiation strategies from competitors in the market	0.8148	0.01391	134.5	9.5	0.000152 5
	0.45002	7.742e-06	9.5		
Higher perceived costs than benefits	0.81566	0.0142	122.5	21.5	0.002208
	0.54746	4.045e-05	21.5		

Source: Own calculation.

Initially, the normality of the data was checked to determine if the considered datasets were normally distributed or not. The null hypothesis states that the population is normally distributed, i.e., if the p-value is greater than 0.05, then the null hypothesis is accepted.

Nevertheless, in both iterations, for all six predefined statements, whether using highlighters or not, the p-value obtained from the test was consistently less than 0.05. This indicates the rejection of the null hypothesis and the acceptance of the alternative hypothesis for the dataset sample across all

six predefined statements, implying a non-parametric distribution of the data.

Therefore, in this case, the relation between two independent groups (i.e., highlighters and non-highlighters) was determined by using the Wilcoxon rank sum test with continuity correction rather than the conventional comparison of means.

As the value of p for all six predefined statements (two-tailed) was significantly less than the threshold value of 0.05, the null hypothesis in this case was rejected, accepting the alternative hypothesis and inferring a significant relationship within the two independent groups compared. In each of the six cases, the individuals who used the OQT: Mountain label highlighters showed distinct agreement levels on the predefined statements compared to those who did not use highlighters. Put simply, highlighters were aligned in their belief that the mountain label enhances product identity, while non-highlighters held the opposite view and expressed disagreement.

Evaluation of the OQT: mountain label by the producers

Following their participation in the producer survey, mountain producers were subsequently asked to assess whether the overall use of the mountain label had met their expectations or not. Again, a five-point scale was used to understand their response to this question, with 1 being completely not fulfilled and 5 being completely fulfilled. The average value of this was quantified as 3.45, which can be used to construe that the producers' expectations were just partially fulfilled by adhering to the mountain label in Romania. Out of all the respondents, 37.5% decided to remain neutral in this case. 29.17% of the producer's expectations were completely fulfilled by the label, and the other 16.67% had their expectations partially fulfilled by registering themselves in this voluntary quality scheme. Almost 17% of the producers responding were not fulfilled by signing up with the OQT: Mountain Label scheme.

Similarly, when asked if the mountain producers were interested in extending the OQT: Mountain label by complying with EU and Romanian legislation, 55% were

interested in extending their certification, and the other 16.67% preferred to be neutral. Almost 30% of the population was thinking of not extending the OQT: Mountain label further. Some of the reasons for continuing with the certification, as mentioned by the producers, were related to the simplified certification process. However, most of the producers just wanted to continue with the certification to take advantage of the government's VAT reduction scheme. On May 14, 2019, GO 31/2019 came into force, reducing the VAT from 9% to 5%, especially for the delivery of high-quality food, including mountain products approved by the Ministry of Agriculture and Rural Development [5].

Fisher's Exact Test for Count Data to check correlation between the highlighting of the mountain label and producers' expectation fulfilment and decision of extension

A Fisher's Exact Test for Count Data was done to verify if there exists any correlation between the highlighters and non-highlighters with the expectation fulfilment and possible decision of extension using a bivariate table. The reason for using Fisher's exact test is because the contingency table of the expected frequencies was below 5. The obtained p-value using Fisher's test was $p = 0.001248$, which is less than 0.05 at the 95% significance level, which means the null hypothesis in the case was rejected. That is, the decision to highlight the producers' mountain label was influenced by the producer's expectations (Figure 12).

Similarly, the other Fisher's exact test for count data between the highlighting decision of the mountain producer's and the possible decision of extension was also done to determine any dependence between the mentioned variables also shown in the bivariate table.

The obtained p-value in the case was 0.00585, which is also smaller than 0.05 at the 95% significance level, which means the null hypothesis in this case was also rejected, indicating a direct dependency between the producer's decision to highlight the label and

their possible decision to extend the label certification.

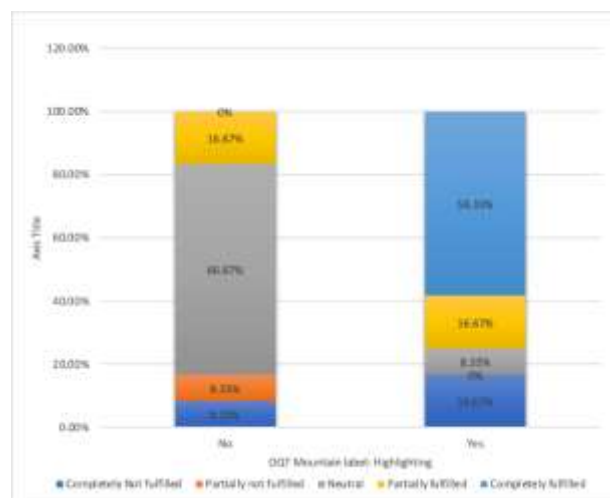


Fig. 12. Highlighting decision of the label with evaluation of producer's fulfilment (%)

Source: Own determination based on the data from field survey, 2023.

Below provided is the stacked bar chart (Figure 13) representing the distribution of the highlighting option of the mountain producers plotted against the agreement of the producers on their evaluation of the fulfilment and possible extension of the certification of the label expressed in percentage.

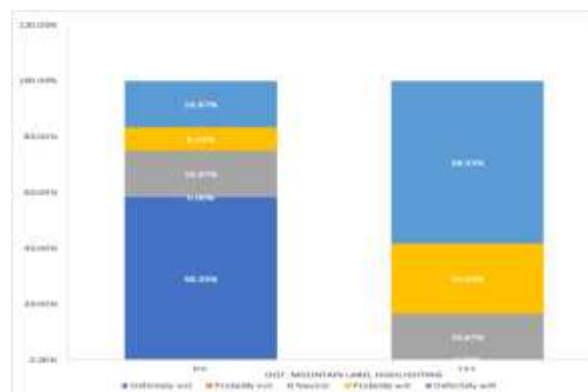


Fig. 13. Highlighting decision of the label with certification extension (%)

Source: Own determination based on the data from field survey, 2023.

CONCLUSIONS

Therefore, in this case, the relation between two independent groups (i.e., highlighters and non-highlighters) was determined by using the Wilcoxon rank sum test with continuity correction rather than the conventional comparison of means. this group perceive the

benefits associated with the mountain products differently. The usual producers who highlight mountain product label believed to have benefitted from the use of mountain labels, however in contrast the ones who are not highlighting the mountain label to promote their products after official registration have completely different opinions than the usual highlighters where in a nutshell, they believe the use of the mountain label have not help them to enhance the product image, increase consumer confidence and served as an tool of competitive advantage compared with other labels available in the market.

The time of use of OQT: Mountain label in Romania has been effectuated and regulated for 7 years as of now, however, some of the producers' expectations from their initial intention by registering to these quality scheme has not been fulfilled as the research indicated, with many preferred to be neutral. Also, out of the group of respondents who contributed in the research, 30% were not seeking to extend their certification or be a regular part of highlighting the label in their mountain products, which hints at slow reluctance of the mountain producers in usage of the mountain label. In addition, only 50% of the producers were somewhat engaged in promoting their products with the registered label.

ACKNOWLEDGEMENTS

The study was a part of Master Thesis being conducted in collaboration with Highclere Consulting (HCC), which assisted in data collection, and financial support with study colleagues being an integral part of EU Horizon2020 MOVING Project that has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 862739.

REFERENCES

[1]Antonescu, D., 2017, The mountain regions in the context of 2020 strategy, Institute of National Economy, 95-105. https://www.researchgate.net/publication/263086511_T

[he_mountain_regions_in_context_of_2020_Strategy](#), Accessed on March12, 2023.

[2]Bower, K.M., 2003, When to use Fisher's exact test https://www.researchgate.net/publication/265026286_When_To_Use_Fisher's_Exact_Test, Accessed on June 26, 2023.

[3]Bratoveanu, B. D., Costea, R. B., Mansour, J., Stanciu, S., 2021, Mountain Products. A Lot of Opportunities for Romanian Food Producers. 7th BASIQ International Conference on New Trends in Sustainable Business and Consumption, 921-929. 10.24818/BASIQ/2021/07/115.

[4]Cei, L., Defrancesco, E., Gatto, P., Gatto, P., Pagliacci, F., *et al*, 2023, Pay more for me, I'm from the mountains! The role of the EU Mountain Product term and other credence attributes in consumers' valuation of lamb meat. *Agriculture and Food Economics* 11, Art. 12 .<https://doi.org/10.1186/s40100-023-00253-y>

[5]Chirovici, D., 2019, VAT from 9% to 5% for Romanian Organic Food, *Exprom*. <https://exprom.ro/en/vat-reduction-from-9-to-5-for-romanian-organic-mountain-or-traditional-food-2/>, Accessed on June 26, 2023.

[6]Coca, A., Gabor, M.R., 2021, Optional quality term 'mountain product' among geographical indications. how do we stand in the Carpathian countries, *Risk in Contemporary Economy*, 1(1), pp. 450-460. <https://doi.org/10.35219/rce20670532139>.

[7]Commission delegated Regulation (EU) No 665/2014 of 11 March 2014 supplementing Regulation (EU) No 1151/2012 of the European Parliament and of the Council with regard to conditions of use of the optional quality term 'mountain product' <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0665&from=en>, Accessed on Feb 27, 2023.

[8]Gil, J.M., Soler, F., 2006, Knowledge and willingness to pay for organic food in Spain: Evidence from experimental auctions. *Food Econ.*2006, 3, 109-124.

[9]Israel, G. D., 1992, Sampling The Evidence Of Extension Program Impact. Program Evaluation and Organizational Development, IFAS, University of Florida. PEOD-6. October.

[10] Ministry of Agriculture and Rural Development, MADR and MRDPA. (2019, March 22). Order 97 19/02/2019. Legislative portal, <https://legislatie.just.ro/Public/DetaliiDocumentAfis/211979>, Accessed on June 13, 2023.

[11] Ministry of Agriculture and Rural Development, MADR. (2017, March 14). MADR Order no. 52/2017 - the approval of the Procedure for verifying the conformity of the data contained in the specifications in order to grant the right to use the optional quality mention "mountain product". <https://legeaz.net/monitorul-oficial-182-2017/omad-52-2017-procedura-verificare-acordare-drept-utilizare-mentiune-produs-montan>, Accessed on June 13, 2023.

[12]Ministry of Agriculture and Rural Development, National Agency for Mountain Area, Map of the study

area: Făgăraș, Bucegi, and Southern mountain massifs, <https://azm.gov.ro/>, Accessed on May 22, 2023.

[13]Ministry of Agriculture and Rural Development, National Agency for Mountain Area, LAU List in the mountain area, <https://azm.gov.ro/wp-content/uploads/2022/09/Anexa-nr.-1-Lista-unitatilor-administrativ-teritoriale-din-zona-montana.pdf>, Accessed on May 25, 2023.

[14]Ministry of Agriculture and Rural Development, National Agency for Mountain Area, National Registry of Mountain Products, National Agency of Mountain Zone, <https://azm.gov.ro/3-registrul-national-al-produselor-montane/>, Accessed on April 13, 2023.

[15]Onesifereanu, N., Ștefan, G., Gitan, D., 2018, The mountain product in the equation of the local economies, *Scientific Papers*, 61(2), 285-292.

[16]Regulation (EU) No 1151/2012 of the European Parliament and the Council of 21 November 2012 on quality schemes for agricultural products and foodstuffs, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012R1151&from=EN>, Accessed on Feb 27, 2023.

[17]Stanciu, S., Rizea, R.D., Ilie A.G., 2015, Study on the Competitiveness of the Romanian Meat Processing Industry. *Amfiteatru Economic*, 17 (Special Issue 9), pp.1331-1345.

[18]Toma, I., Haddad, F. M., Garlea, C., Pipiregeanu, M., Popa, M. E., 2019, The mountain product- The visit card of the mountain areas. *Scientific Bulletin. Series F. Biotechnologies*, XXIII, 211-215. 2285-1372

[19]Velčovská, Š., 2016, Food quality labels from the Producer's Perspective, *Journal of Central European Agriculture*, 17(3), pp. 815–834. <https://doi.org/10.5513/jcea01/17.3.1779>.

[20]Von Dach, W., S., Romeo, R., Vita, A., Wurzinger, M., Kohler, T., 2013, Mountain farming is family farming: a contribution from mountain areas to the International Year of Family Farming 2014. FAO, 2013..

[21]Zuliani, A., Esbjerg, L., Grunert, K.G., Bovolenta, S., 2018, Animal welfare and mountain products from traditional dairy farms: How do consumers perceive complexity? *Animals*,8, 207.

