

CONSUMER UNDERSTANDING AND PERCEPTION OF MOUNTAIN LABEL IN THE CITY OF BRAȘOV, ROMANIA

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Abstract

The European Union introduced Regulation No. 1151/2012 to delineate the optional quality term "mountain product," aiming to preserve and promote the originality and authenticity of mountain foodstuffs. This research endeavors to delve into the comprehension and perception of the mountain label, considering awareness of the label and willingness to pay. With the remarkable increase in the adoption of the mountain label among producers in the mountain regions of Romania, this study seeks to investigate whether consumers purchasing the product in the market are cognizant of the provisions outlined by the National regulatory bodies and authorities for the mountain label. A general consumer survey with questionnaires was planned, organised, and implemented within Brașov city to elicit necessary findings. Although, the consumer was aware regarding the benefits associated with products with mountain label and also the places to easily find the mountain label, the consumers (50.77%) perceived mountain labelled product to be expensive. Similarly, only 47% of the respondents were interested in paying more for the products with mountain labels and 50% were completely unsure about their purchasing decisions, which indicates a clear unsurety in the mind of the consumers. The consumers (70%) seemed unaware about the mountain label although they had general idea regarding mountain products and the categories of products that are made available in the market verified by the agencies. The findings of this research can be beneficial to initiate different promotional campaigns launched at consumers to better educate them regarding mountain labels and to avoid misleading the consumer with any use of terms related with mountains and assist in overall mountain sustainability.

Key words: mountain label, consumer, understanding, mountain product, awareness, Romania

INTRODUCTION

Mountain labels are the labels that assure the origin of the products that originate from mountain areas. Agricultural and food-related activities in mountainous regions contribute to the sustainability of these areas and foster the development of supply chains for mountain foods. [16]. On the European stage, the initial endeavor to formalize the Optional Quality Term (OQT) "mountain label" was initiated in 2012 through the specific regulations EU 1151/2012, addressing the quality scheme for agricultural and food products. Subsequently, more comprehensive regulations detailing the conditions for using the optional quality term "Mountain product" were set forth by EU 665/2014, supplementing the aforementioned earlier regulation.

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 [5]. Also, the growing interest shown by consumers in local and mountain products is motivated not only by the quality of these products but also by a rediscovery of local cultures with psychological benefits for consumers [8]. As the uptake of mountain label among the producers has been on rise, the interest of present study highlights the consumer awareness and understanding of mountain labels in Romania as eventually the market of the mountain labelled products is balanced by consumers through their purchases.

Consumers demonstrate a keen interest in purchasing mountain food products and are willing to pay premium prices for these items, provided they adhere to traditions, reflect the essence of the territory, prioritize environmental considerations, and uphold ethical standards [15]. The mountain product label can be a resource to support the mountain economy especially addressed to people sensitive to environmental concerns [9].

In Romania, consumer perceptions of food prices indicate a high degree of annoyance as most high-quality foods are not always affordable in terms of quality and price [2]. Like in other EU Member States, also in Romania the impact of food quality on consumer choices is mostly stimulated by behavioural predisposition. This impulsive decision-making while purchasing food products also corroborates the findings presented by [4], which indicate that price points are decisive factors for consumers making purchasing decisions while purchasing traditional food products in Romania. However, despite the additional cost-levying factors for consumers in Romania, it is believed that qualitative products are of higher monetary value than conventional products by virtue of their taste, health aspects, and quality aspect [4]. Romanian people are more and more selective concerning food, preferring to search for traditional fair goods as being natural and friendly to the environment [12].

MATERIALS AND METHODS

The introduction of the mountain labels within the EU legislation was to inform consumers regarding the mountain origin of the products and thus enable the producers representing the mountain areas to fetch better prices for their products in a competitive market. Specifically, leveraging the use of mountain products to promote mountain agri-food products is envisioned to yield several positive outcomes. These include bolstering the mountain agri-food sector, diversifying local economies, offering quality assurances to consumers, safeguarding the environment,

and preserving territorial biodiversity [1]. In particular the primary purpose of this research is to understand to what degree the consumers based in Braşov, which is one of the populated mountainous cities in Romania are aware of the mountain label which has been put into operation by the concerned authorities.

The consumer research study area was selectively conducted in and around Braşov City located in the Braşov County in Romania. According to the 2021 census, it has a population of 237,589 inhabitants with a total surface area extending to 267 square kilometres and located at an altitude of 600m from the mean sea level. A total of **65 respondents** participated in the consumer research whose responses were analyzed to derive certain conclusions on the existing understanding of mountain products and labels in Braşov, Romania.

The study employed descriptive and inferential statistics and econometric models like ordinal logistic regression to analyze the data. Descriptive statistics like mean, frequency, and standard deviation and data visualization like bar charts and pie charts were used to present the summary statistics of socio-demographics, and consumer understanding of the mountain labels. 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.

In order to understand the relationship between different independent variables (age, gender, education, net income, profession, marital status, and responsibility in purchasing) and the willingness to pay for the mountain-labelled product, an ordinal logistic regression was employed.

The equation for the ordinal logistics regression model is given by the equation:

$$\text{logit} [P (Y \leq j)] = \alpha_j + \beta_j x \dots\dots(1)$$

where:

P= Probability of score

Y= Ordinal Outcomes with J categories

α = Constant associated with the j^{th} distinct response category

β = Vector of coefficients associated with the predictors

x = Vector of predictor variables

$j=1, \dots, J-1$ and $i = 1, \dots, m$.

Alternatively, here, j is the level of an ordered category with J levels, and i corresponds to independent variables [13].

For our case, j represents the willingness to pay (No, May be, Yes), and i represents all the other independent variables as mentioned above.

Table 1. Description of variables used in ordinal binary logistics regression (willingness to Pay)

| Variable | Type | Description | Value |
|--|-------------------|--|--|
| Independent variable (Y) | | | |
| Willingness to pay | Dummy | Consumer are willing to pay or not for products with mountain labels | No = 0, Maybe = 1, Yes = 2. |
| Dependent variable (x_i) | | | |
| Age | Dummy (as factor) | Age group of the respondents | 18-24 = 1 25-34 = 2 35-44 = 3 45-54 = 4 55-64 = 5 64 or above = 6 |
| Gender | Dummy (as factor) | Gender of the respondents | Female = 1 Male = 2 |
| Education | Dummy (as factor) | Education of the respondents | Secondary school = 1 Vocational school = 2 Undergraduate studies = 3 Postgraduate studies = 4 |
| Profession | Dummy (as factor) | Professional status of the respondents | Employed = 1 Retired = 2 Student = 3 Freelancer = 4 |
| Income | Dummy (as factor) | Income level of the respondents | <1,250 RON = 1 1,250-1,500 RON = 2 1,501-2,550 RON = 3 2,551-3,500 RON = 4 3,501-6,000 RON = 5 6,001-7,500 RON = 6 7,501-10,000 RON = 7 >10,000 RON = 8 |
| Marital status | Dummy (as factor) | Marital status of the respondents | Married = 1 Single = 2 Divorced = 3 |
| Responsibility in Purchasing | Dummy (as factor) | Respondents' role in purchase of food products | Yes = 1 Partially = 2 No = 3 |

Source: Own determination.

RESULTS AND DISCUSSIONS

The consumer survey restricted to Braşov was planned, developed, organized, and distributed with the intention of getting insights on the consumer's understanding of the mountain products, labels, and their perception of the price points and willingness to pay for the mountain products. Table 2 provides a comprehensive tabulated summary of the socio-demographic characteristics of the respondents, showcasing their participation frequencies and percentages.

Table 2. Socio-Demographic Characteristics of the Respondents

| | Frequency (n) 65 | Percentage (%) |
|---------------------------------|------------------|----------------|
| Gender | | |
| Male | 25 | 38.46% |
| Female | 40 | 61.54% |
| Age | | |
| 18-24 | 7 | 10.8% |
| 25-34 | 17 | 26.2% |
| 35-44 | 19 | 29.2% |
| 45-54 | 16 | 24.6% |
| 55-64 | 5 | 7.7% |
| 65 + | 1 | 1.5% |
| Monthly net income (RON) | | |
| <1,249 | 0 | 0 |
| 1,250-1,500 | 2 | 3.08 |
| 1,501-2,550 | 2 | 3.08 |
| 2,551-3,500 | 12 | 18.46 |
| 3,501-6,000 | 21 | 32.31 |
| 6,001-7,500 | 15 | 23.08 |
| 7,501-10,000 | 9 | 13.85 |
| Level of Education | | |
| Secondary School | 0 | 0 |
| High School | 4 | 6.15 |
| Vocational School | 1 | 1.54 |
| Undergraduate studies | 29 | 44.62 |
| Postgraduate studies | 21 | 47.69 |
| Professional status | | |
| Employed | 50 | 76.92 |
| Seasonal worker | 0 | 0 |
| Pension | 1 | 1.54 |
| Student | 3 | 4.62 |
| Unemployed | 0 | 0 |
| Freelancers | 8 | 12.31 |
| Others | 3 | 4.62 |
| Marital Status | | |
| Married | 34 | 52.31 |
| Single | 28 | 43.08 |
| Divorced | 3 | 4.62 |
| Widowed | 0 | 0 |

Source: Own calculation base on the data from field survey, 2023.

As clearly indicated in Table 2, among the respondents who participated, the majority of the consumer respondents were female (61.54%), whereas the other (38.46%) of the

respondents identified themselves as male. The age of the respondents was majorly distributed within the age group between 25 and 54, almost equalling 80% of the total respondents who attended the survey; meanwhile, 10.8% of the population were considerably young within the limit of 18–24, and the other 9.2% were older, exceeding the age limit of 55. Most of the respondents who took part in the consumer survey were employed (76.92%), while there were a few other participants who identified themselves according to different professional statuses, namely pensioners (1.54%), students (4.62%), freelancers (12.31%), and others (4.62%). Considering most of the sample respondents to be engaged, the amount of monthly net income they earn was also in the middle level, with 3,501–6,000 RON being the most dominant one, with 32.31% of those falling in these strata of income level.

There were only a few of the respondents who earned between 1,250 and 2,550 RON (6.16%), and similarly, the respondents who earned above the average salary (>7,500 RON) were also fewer (20%) of the sample respondents.

All of the sample respondents who contributed to the consumer research were skilled and educated, with almost 94% of the respondents having an undergraduate or postgraduate degree with them. Concerning the sample respondent's marital status, 52.31% of them were married, 43.08% were single, and the rest 4.62% identified themselves as divorced, with no widow participating in the survey.

Responsibility of food purchases: Segmented by gender of the respondents

Upon querying the sample respondents about their involvement in procuring agricultural and food products for their households, a significant majority (58%) affirmed their active engagement and elaborated on their roles.

Conversely, 37% indicated partial involvement in the purchasing of such products, while 5% stated no investment at all in this household procurement process.

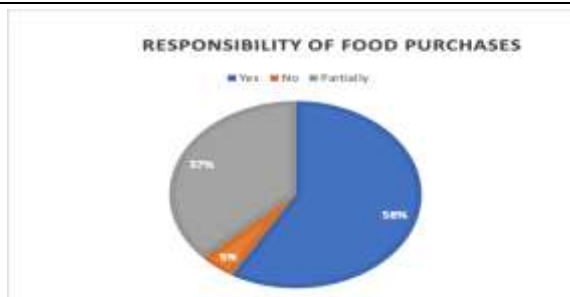


Fig. 1. Distribution of purchasing responsibilities
 Source: Own determination based on the data from field survey, 2023.

The active participation of females in purchasing more quality-oriented food products (namely organic) [11], a Fisher's exact test was done here to evaluate if the purchase of food and agriculture products is largely impacted by gender, with the null hypothesis indicating no significant dependencies between the gender of the respondents and the responsibility of food purchases.

A two-sided test done failed to reject the null hypothesis ($p = 0.6821, >0.05$), stating there is no correlation or dependence between the gender of the respondents and their responsibility in the purchase of the food products. In simple words, both gender groups were equally involved in the process of purchasing food products for their households.

A stacked bar chart between these two variables has been drawn and is represented in Figure 2.



Fig. 2. Stacked bar-chart between gender of the respondents with their responsibility
 Source: Own determination based on the data from field survey, 2023.

Description of the purchase decisions and preferred product

A multi-choice question was then asked to the pool of respondents to understand the major

factors behind their purchase decisions of food products and what kind of product they usually prefer for their purchase. From the selected sample of respondents reached during the consumer survey, the respondents were asked to motivate their answers. Out of the responses received, 83.08% of the respondents shared that origin and place of production are the main reasons behind their purchase decision, which also corresponds to the research results of [6], stating 80% of the Romanian population opts for Romanian local products and brands during their purchases. Similarly, 53.85% and 43.08% of the respondents, respectively, stated that the price and reputation of the brand of the product they are purchasing are other factors impacting their purchasing decision. A handful of participants (13.85%) mentioned packaging as one of the crucial factors behind their purchase, and a few of the 4.62% said the ingredients of the product were the other motivating factors that drove their purchasing decision (Figure 3).

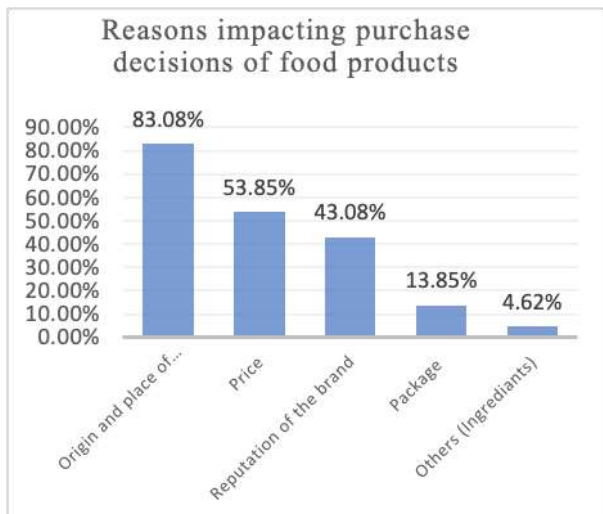


Fig. 3. Respondent's reasons that impact their food purchases
 Source: Own determination based on the data from field survey, 2023.

Similarly, as shown in Figure 4, the respondents were further asked about the category of product they usually select during their purchases. Most of the survey participants pointed out local products (72.31%) as their primary choice of selection, followed by national products (58.46%) and regional products (53.85%). Some of the

respondents also preferred EU products (16.92%) and foreign products (6.15%) during their shopping for food products.

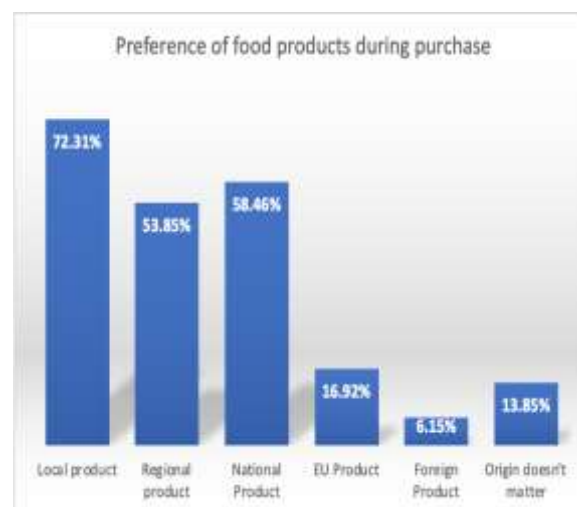


Fig. 4. Respondent's preferences during food purchase
 Source: Own determination based on the data from field survey, 2023.

Attention to quality Labels during Purchasing: Compared by age of the respondents

The responses to the attention provided to the quality label when purchasing the food product were then analysed and represented as shown in the figure. 62% of the sample respondents indicated their agreement with looking at the quality labels during their food purchases, whereas 31% of the respondents mentioned that they only check the labels occasionally. 1% of the sample respondents never checked the quality label during their purchase, and 6% of them are attentive to the quality labels associated with the food products (Figure 5).



Fig. 5. Attention given to quality label
 Source: Own determination based on the data from field survey, 2023.

[17] concluded that as age increases, the probability of using food labels decreases. Subsequently, a chi-square test was conducted to examine whether the respondents' attentiveness during food purchases was contingent on the age of the sample respondents. A null hypothesis was formulated for this analysis ($H_0 =$ Respondent attentiveness during food purchase is independent of the age group of the sample respondents, and an alternative hypothesis was created explaining the inverse). Upon computation of the chi-squared tests (**X-squared = 32.692, df = 15, p-value = 0.005177**), as the obtained value of p was less than the allowed level of 0.05, the null hypothesis in this case was rejected, which means the alternative hypothesis was accepted, indicating a clear dependency between the age of the respondents and the focus or attention they give during the purchase of food with quality labels. The distribution of income and attentiveness during the purchase of food quality labels is also further expressed in Figure 6.

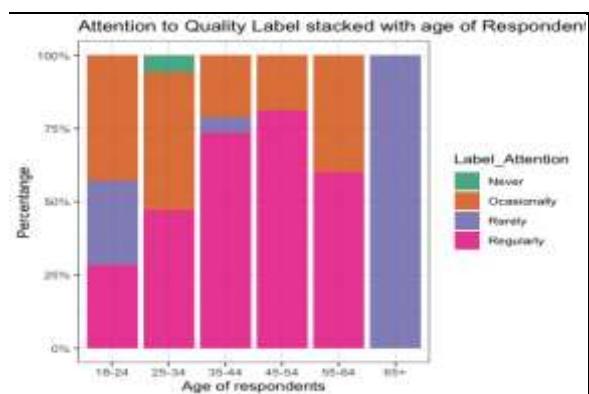


Fig. 6. Stacked bar chart between label attention and age of respondents

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

A study conducted in 38 countries, reported that 18% of European respondents claimed that they "always" check the nutrition information on the package [10]. Therefore, when the consumer respondents were asked regarding the primary reasons of theirs to give attention to the quality labels, most of them (64.6%) replied that their intentions to have a healthier diet were the essential reasons; similarly, 47.6% of them answered that

tracking the origin of the product was the reason behind giving attention to the label during their food purchases, and 46.2% of them had the motivation of supporting the local and national producers behind their rationale for being attentive to the food label details. On this multiple option selection questionnaire, 15.4% of them answered curiosity as another purpose for checking the food labels.

Frequency of purchase of quality labelled products: Categorized by professional affiliations

When the respondents were asked about their frequency of purchases related to quality labelled foods, most of them answered that they were somewhat responsible for purchasing quality labelled food products. 49% of the sample respondents were occasionally engaged in the purchase of food with quality labels, and 48% of them were regularly buying such products to fulfil their household requirements. The rest of the 3%, as shown in the figure, replied that they rarely buy food with quality labels.



Fig. 7. Frequency of purchase of quality labelled foods
 Source: Own determination based on the data from field survey, 2023.

According to [14] the socio-economic status of the consumers has little implication on the reading of the food labels; therefore, to understand more about this in the present study, a chi-square test was planned and done to check the dependency between the frequency of purchase of the quality-labelled product and the professional status of the respondents. A null hypothesis for this was prepared ($H_0 =$ Respondent purchase of quality food labels is independent of the

professional status of the sample respondents, and an alternative hypothesis was created explaining the inverse). Upon computation of the chi-squared tests (X-squared = 8.6672, df = 8, p-value = 0.3711), was obtained.

As the obtained value of p was greater than the allowed level of 0.05, we fail to reject the null hypothesis, which indicates no clear dependency between professional status and their frequency of purchase of quality labelled products.

That means professional status has no role in consumers buying quality-labelled products. The distribution of professional status with the frequency of purchase of quality labelled food is also further expressed in the stacked bar chart (Figure 8).

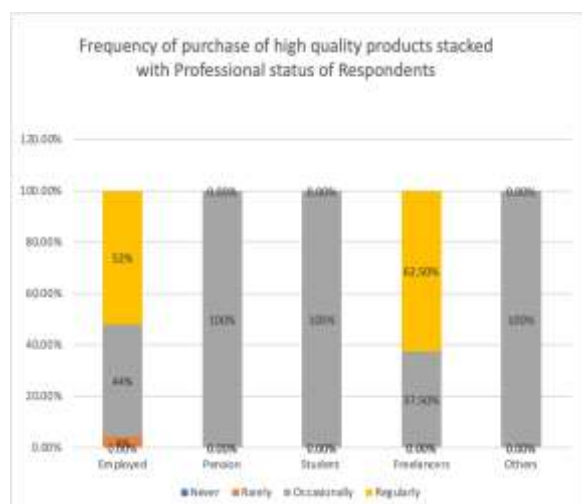


Fig. 8. Stacked bar chart between frequency of purchase and profession of respondents
 Source: Own determination based on the data from field survey, 2023.

Awareness Study: Mountain products and Mountain labels

Participants in the consumer survey were then queried about their awareness of both mountain products and the mountain label, as illustrated in Figure 9.

78.46% of the respondents had earlier heard of mountain products, and only 21.54% had no clear idea related to mountain products.

However, on the contrary, 69.23% of the same respondents interviewed had no idea regarding the national labels related to mountain products, as authenticated by the decision of the Ministry of Agriculture and Rural Development, MADR No. 5/2017.

A Pearson's correlation test was then done to evaluate if there was a significant correlation between these two responses.

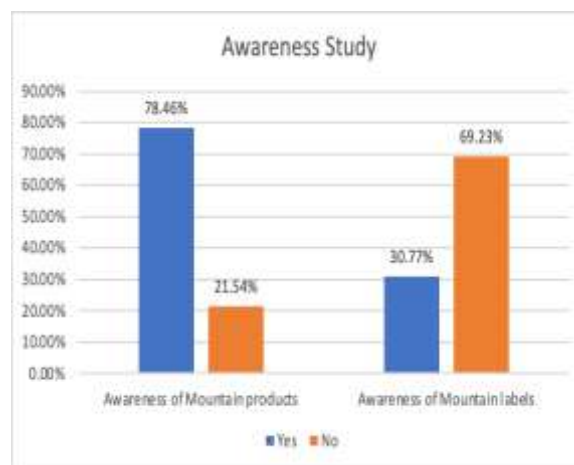


Fig. 9. Awareness Study
 Source: Own determination based on the data from field survey, 2023.

Upon calculation, a correlation coefficient of 0.34 was obtained, which indicated a positive correlation between the two sets of questions. However, when a correlation test was computed ($t = 2.9588$, $df = 63$, $p\text{-value} = 0.004347$, **95 percent confidence interval: 0.1152068 0.5466226**), the p-value obtained was less than the significance level (0.05), indicating acceptance of the alternative hypothesis, which means there is a significant difference between the awareness of the mountain product and the mountain label. In simple words, the consumers are aware of the mountain products; however, they know very little about the mountain label logo that has been authorized by the government.

Definition and Categorization of Mountain Products

Among the pool of respondents who participated in the survey questionnaires, as reflected in Figure 10, only 69.23% of the respondents had a complete idea of the definition of a mountain product and the locality where the product needs to be produced and processed, and almost the same proportion of people (70.77%) had an understanding of the categories of products that can be labelled as mountain products as per the national regulation. Almost 30% of the respondents in both cases lacked proper knowledge and understanding of the mountain

products and mountain product categories, which also hints at less effective marketing and promotional campaigns concerning the label both at the local and national level.

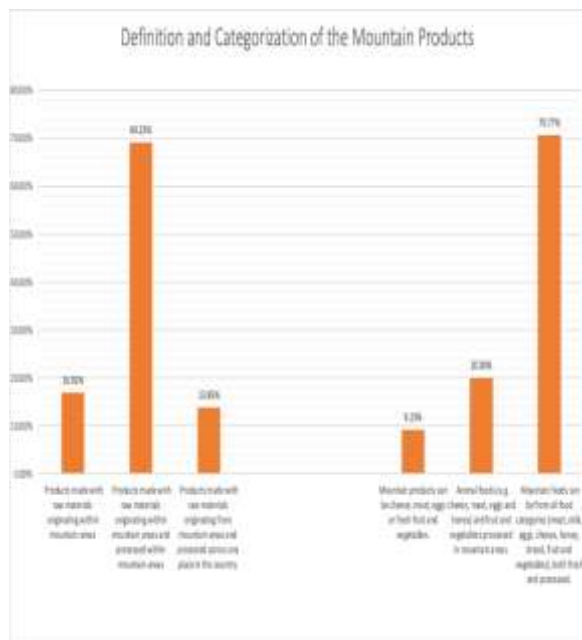


Fig. 10. Understanding of Definition and Categorization of the Mountain Product
 Source: Own determination based on the data from field survey, 2023.

Chi-Square tests between awareness of the mountain labels and education

As the research of [18] analysed the use of food label information by urban consumers, they found a significant relationship between the respondents' education and their inclination to check the food quality labels. Therefore, to understand more about this in the present study, a chi-square test was planned and done to check the dependency between awareness of the mountain label and education of the sample respondents. A null hypothesis for this was prepared (H_0 = Awareness of the mountain labels is independent of the educational qualification of the sample respondents, and an alternative hypothesis was created explaining the inverse). Upon computation of the chi-squared tests (**X-squared = 1.1838**, **df = 3**, **p-value = 0.7569**). As the calculated p-value exceeded the accepted threshold of 0.05, we retain the null hypothesis, suggesting no significant dependence between professional status and the frequency of purchasing

quality-labelled products. In other words, the educational qualifications of the respondents do not play a role in their awareness of mountain labels. In other words, the consumer awareness of the mountain labels is independent of the educational qualification, insinuating that all the categories of respondents, irrespective of their educational qualification, had a minimal idea of the mountain label. Figure 11 visually represents the distribution of educational qualifications along with the awareness of the mountain label through a stacked bar chart.

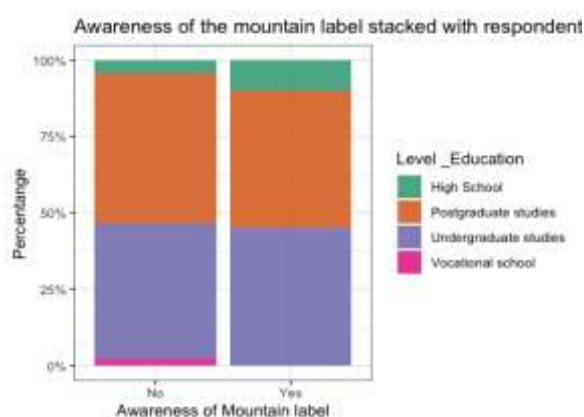


Fig. 11. Awareness of the mountain label stacked with education
 Source: Own determination based on the data from field survey, 2023.

Benefits of purchasing mountain labelled and point of sales

When respondents in the consumer survey were questioned about the various benefits associated with purchasing mountain products, a majority (53.8%) promptly linked it to the promotion of local identity and products. This aligns with the conclusions of [19], where a similar finding was reported, indicating that mountain products are characterized by traditional practices connected to the cultural identity of local communities and specific cultural areas. Similarly, Figure 12 shows that 47.7% respondents believed that purchase of the mountain labeled product would ensure better sensory and health benefits implicit in the consumption of the products, as indicated in the research of [3]. 41.5% commented that the mountain labeled products are better than the conventionally and industrially produced

products, and 32.3% had similar thoughts, as they thought it added assurance to consumers during the purchase of these products. Confoundingly, only 1.5% of the respondents believed that the purchase of mountain-label products boosts the local economy (Fig. 12).



Fig. 12. Benefits perceived by consumers through mountain labeled products.
 Source: Own determination based on the data from field survey, 2023.

Likewise, when the consumer respondents were asked regarding **the point of purchase of mountain-label products**, 73.85% of them thought direct sales points like farms were the most common purchasing points for mountain-label products. 61.54% and 58.46% of the respondents mentioned local products, specialty products, and farmer’s markets as other crucial centers to purchase the mountain labeled products.



Fig. 13. Point of purchase of mountain labeled foods
 Source: Own determination based on the data from field survey, 2023.

In the age of digital marketing, 43.08% and 26.15% of consumers thought that mountain-label products could be get through online or Facebook groups.

On the other end, only 26.15% of the consumers thought they could easily buy the mountain products from the super or hypermarkets in their vicinity.

Perception of price of mountain labelled products: Categorized as per income

The communication strategies aimed at promoting mountain products have guaranteed better positioning and higher market prices for them and are fundamental for the sustainable development of mountain companies and adequate remuneration for high-quality products [7].

Therefore, it was essential to understand how the sample respondents from Braşov perceive the prices of the mountain labelled quality products. 50.77% of the respondents believed that the mountain products are highly priced and are expensive compared to other conventional food products, and the other 49.33% mentioned that they find parity on the prices of the mountain products with other conventional products (Figure 14).

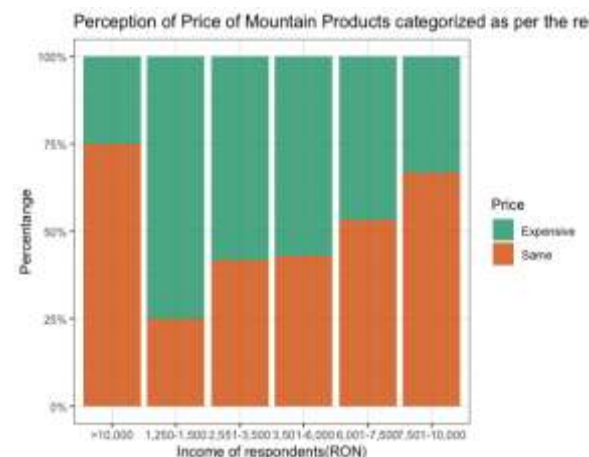


Fig. 14. Stacked bar chart between perception of price and income of respondents
 Source: Own determination based on the data from field survey, 2023.

To further explore this in depth, a chi-square test was planned and done to check the dependency between awareness of the income level of the respondents and their perception of the price of mountain products. A null hypothesis for this was prepared ($H_0 =$

independence between the perception of price and income of the sample respondents), and an alternative hypothesis was created explaining the inverse.

Upon computation of the chi-squared tests (**X-squared = 3.8141, df = 5, p-value = 0.5765**), As the obtained value of p was greater than the allowed level of 0.05, we fail to reject the null hypothesis, indicating no clear dependency between the two variables.

The stacked bar-chart distribution of income with the perception of the price of mountain products is also further expressed in Figure 14.

Ordinal logistic regression was executed using R programming, and the results of the mathematical computation are represented below in Table 3.

Table 3. Output Summary of the Logistics Regression

| Variables | Value | Standard error | T value | P value |
|--|--------|----------------|----------|---------|
| Age | | | | |
| 25-34 | 1.022 | 1.62 | 0.630 | 0.528 |
| 35-44 | 1.109 | 1.63 | 0.676 | 0.498 |
| 45-54 | 1.645 | 1.667 | 0.986 | 0.323 |
| 55-64 | 2.225 | 2.12 | 1.046 | 0.295 |
| 65+ | -17.26 | 0.000 | -906 | 0.000* |
| Gender | | | | |
| Male | -0.962 | 0.750 | -1.283 | 0.199 |
| Education | | | | |
| Postgraduate studies | -0.948 | 2.10 | -0.450 | 0.652 |
| Undergraduate studies | -0.895 | 2.064 | -0.433 | 0.664 |
| Vocational school | 35.76 | 0.000 | 2.3e+08 | 0.000* |
| Income | | | | |
| 1,250-1,500 | -17.02 | 1.60 | -10.63 | 0.000* |
| 2,551-3,500 | -16.93 | 0.911 | -18.58 | 0.000* |
| 3,501-6,000 | -16.90 | 0.693 | -24.38 | 0.000* |
| 6,001-7,500 | -17.11 | 0.697 | -24.55 | 0.000* |
| 7,501-10,000 | -17.54 | 0.963 | -18.21 | 0.000* |
| Profession | | | | |
| Freelancer | 0.524 | 1.12 | 0.464 | 0.641 |
| Others | -34.36 | 0.000 | 3.47e+08 | 0.000* |
| Student | 1.780 | 1.952 | 0.911 | 0.361 |
| Marital status | | | | |
| Married | -17.40 | 0.704 | -24.70 | 0.000* |
| Single | -17.66 | 0.635 | -27.78 | 0.000* |
| Responsibility | | | | |
| Partially | 19.35 | 0.661 | 29.24 | 0.000* |
| Yes | 18.40 | 0.592 | 31.10 | 0.000* |
| No Maybe | -15.87 | 0.981 | -16.17 | 0.000 |
| Maybe Yes | -15.78 | 0.983 | -16.03 | 0.000 |
| Residual Deviance: 71.70414 log Lik.' -35.85207 (df=23) | | | | |
| McFadden R2 = 0.27 AIC: 117.7041 * Significance at 95% | | | | |

Source: Own calculation.

Among all the independent variables that were used to run the ordinal logistics regression analysis, the variables with p-values less than 0.05 at the 95% significance level, also indicated by * in Table 3, were considered to be statistically significant and had an influence on the willingness to pay for mountain labels. Also, the McFadden R2 suggests the model was a good fit.

General Statistical Overview of the reasons of not buying mountain products

The group of respondents were then asked about the impediments to their purchase decision of mountain labeled products.

Table 4. Reasons for non buying mountain labeled products

| Pre-Defined formulated Statements | Mean (M) | Variance (V) | Standard Deviation (S.D) |
|--|----------|--------------|--------------------------|
| -Mountain products don't meet the criteria of a safe and healthy product. | 1.68 | 1.28 | 1.13 |
| -I don't understand the meaning of the mountain labels and their associated benefits. | 2.19 | 1.95 | 1.40 |
| -I don't know of any food quality labels. | 2.32 | 1.94 | 1.39 |
| -Significant differences between price and quality ratios | 2.54 | 2.37 | 1.54 |
| -Mountain labels are not easily accessible in my shopping area preferences | 2.93 | 2.74 | 1.66 |
| -Mountain products don't have any potential benefits compared with other conventional foods. | 1.74 | 1.07 | 1.03 |

Source: Own Calculation.

They evaluated six statements, all formulated negatively, using a 5-point scale of agreement (1: absolutely disagree, 5: absolutely agree) (Table 4). As most of the producers had been regularly purchasing mountain related products, 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 0.

As can be clearly observed from the table above, for the first pre-defined statement, the respondents completely disagree, which means they regard mountain products as safe and healthy products, although they are not frequent in their purchases. Similarly, on the second, third, and fourth statements, the consumers convey their partial disagreement, which means they believe they have adequate

or minimal knowledge of mountain labels and food quality labels and believe mountain products offer marginal price-to-quality ratios. Similarly, for the fifth statement, the consumers decided to be neutral, which indicates their doubtfulness about the availability of mountain products nearby their localities. Furthermore, on the last statement, the group of respondents in average disagrees with the fact that mountain products don't

have any potential benefits, indicating good knowledge of the social, environmental, and economic benefits associated with mountain labels, although they are not frequent in the purchase of mountain labeled products. Similarly, a correlation matrix was obtained with the help of the software, which helped in verifying any dependency between the relationships between all of the pre-defined statements (Table 5).

Table 5. p-values for the correlation coefficients

| Reasons for not buying analysis | Safe / Healthy | Meaning | Don't know | Price / Quality | Non-availability | No benefits |
|---------------------------------|----------------|---------|------------|-----------------|------------------|-------------|
| Safe, Healthy | 0.0000 | 0.0040 | 0.9590 | 0.0000 | 0.1620 | 0.0000 |
| Meaning | 0.4110 | 0.0000 | 0.0000 | 0.0150 | 0.0980 | 0.0150 |
| Don't know | 0.9590 | 0.0000 | 0.0000 | 0.1350 | 0.0100 | 0.0630 |
| Price-Quality | 0.0000 | 0.0155 | 0.1350 | 0.0000 | 0.0120 | 0.0000 |
| Non-availability | 0.1610 | 0.0980 | 0.0100 | 0.1210 | 0.0000 | 0.0020 |
| No benefits | 0.0000 | 0.0150 | 0.0630 | 0.0000 | 0.0020 | 0.0000 |

Source: Own Calculation.

It can be clearly observed from the p-values of the correlation test between all the predefined statements and the correlation chart, as shown in the figure 38 below. There are six p values that are greater than the threshold significance level ($p > 0.05$), which means in those cases the null hypothesis cannot be rejected. The way consumers have responded in this case doesn't correspond with their responses in the case of these two statements. Apart from that, in nine other correlation computations between the pre-defined variables, the obtained p-values are less than 0.05, which gives us enough confidence to reject the null hypothesis, indicating a strong correlation between the responses of the consumers between these two pre-defined statements. Also, this analysis gives us the general idea that because of the lack of dependency or correlation between the pre-defined statements, respondents have different opinions on their reasons for not purchasing the mountain labeled products.

CONCLUSIONS

According to our results, the mountain product brand needs to be communicated in a widespread manner, since 70% of respondents

affirmed, they had never seen the brand before the survey.

A strong communication strategy thus needs to be prepared by the concerned authorities with the group of stakeholders involved, like producers, to educate consumers regarding the mountain label.

Promotional strategies aimed at the consumer need to be launched to support mountain agriculture, the economy, and the producer. The consumers will then have a clear image of mountain products so that they can be direct contributors and take maximum benefits from purchasing such products that have been directly endorsed by the government by fulfilling certain sanitary and origin conditions.

Only 47% of the respondents were interested in paying more for products with mountain labels, and 50% were completely unsure about their purchasing decisions, which indicates a clear unsurety in the minds of the consumers. Similarly, one of the reasons for their disinterest in purchasing mountain labeled products, as per the research, can be a higher perception of the prices of the products, as most of the consumers felt that mountain products are usually more expensive for them to include in their purchasing decisions. Therefore, a more simplified marketing

approach is anticipated from all the concerned stakeholders to ameliorate the status marketing and promotional gap that was prevalent in the study.

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