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Achieving economic sustainability by eco-labelling: Case study of Croatian olive oil and foreign consumers

Postizanje ekonomske održivosti eko-označavanjem: Studija slučaja hrvatskog maslinovog ulja i stranih potrošača

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ABSTRACT

Economic sustainability is often the first to be achieved in small-scale production such as olive growing and olive oil production in Croatia. Tourists occupy an important market for Croatian olive oil in terms of olive oil sales at destinations. To achieve economic sustainability, it is necessary to research the international market of olive oil, and by extension, it is necessary to explore the behaviour, perceptions, and preferences of consumers. Therefore, in this study, field research was conducted on a sample of foreign visitors during their stay at the destination, Istria and Primorje-Gorski Kotar County, Croatia. A significant share of respondents sampled bought olive oil during their stay in Croatia, and the predictor variables for having done so were: extrinsic attribute eco-label on the olive oil bottle and positive perceptions toward characteristics of Croatian olive oil. On the other hand, the frequency of consumption was affected by intrinsic attributes such as olive oil taste, category, and country of origin. Running PCA analysis, three major components were identified: 1) intrinsic characteristic, 2) extrinsic characteristic, 3) price. These components were used for the purpose of market segmentation by applying a two-step cluster analysis. A total of four clusters were identified: 1) "The experts", 2) "Indifferent consumers", 3) "Price sensitive" and 4) "The gourmands". For the sake of developing sustainable business of Croatian olive oil, producers shall find clusters "The experts" and "Price sensitive" to be most suitable. In addition, further efforts to increase the production of eco-certified olive oil should be taken.

Keywords: Croatia, olive oil, foreign consumers, economic sustainability, eco-label

SAŽETAK

Ekonomska održivost često je prva koja se želi postići u maloj proizvodnji poput maslinarstva i proizvodnje maslinova ulja u Hrvatskoj. Turisti zauzimaju važno tržište za hrvatsko maslinovo ulje u smislu prodaje maslinovog ulja u destinaciji. Za postizanje ekonomske održivosti potrebno je istražiti međunarodno tržište maslinovog ulja, a samim time istražiti ponašanje, percepcije i preferencije potrošača. Stoga je u ovoj studiji provedeno terensko istraživanje na uzorku stranih posjetitelja tijekom boravka na destinaciji, Istarskoj i Primorsko-goranskoj županiji, Hrvatska. Značajan udio ispitanika je kupio maslinovo ulje tijekom boravka u Hrvatskoj, a prediktorske varijable za to bile su: eko-oznaka na boci maslinovog ulja i pozitivna percepcija karakteristika hrvatskog maslinovog ulja. S druge strane, na učestalost konzumacije utjecali

su intrinzične značajke poput okusa maslinovog ulja, kategorije i zemlje podrijetla. Analizom glavnih komponenti, identificirane su tri glavne komponente: 1) intrinzične značajke, 2) ekstrinzične značajke, 3) cijena. Ove komponente korištene su u svrhu segmentacije tržišta primjenom klaster analize. Identificirana su ukupno četiri klastera: 1) "Stručnjaci", 2) "Ravnodušni potrošači", 3) "Cjenovno osjetljivi" i 4) "Gurmani". Za razvoj održivog poslovanja hrvatskim proizvođači maslinova ulja najprikladniji su klasteri "Stručnjaci" i "Cjenovno osjetljivi". Potrebno je uložiti daljnje napore za povećanje proizvodnje ekološki certificiranog maslinovog ulja.

Ključne riječi: Hrvatska, maslinovo ulje, strani potrošači, ekonomska održivost, ekološka oznaka

INTRODUCTION

The sustainability of agricultural production, i.e. olive growing and olive oil production, can be achieved by giving consideration to all three pillars of sustainability: economic, social and environmental (Rees et al., 2019). First, the economic pillar of sustainability of agricultural production is a way to secure income under changing climate and market conditions. Often when developing small family farms, economic sustainability is the first of the two remaining – i.e. environmental and social one, to be achieved. In valorising economic sustainability, certain indicators may be used to assess its state. Following (Hennessy et al., 2013.), economic indicators are divided into: 1) Productivity of labour, 2) Productivity of land, 3) Profitability, 4) Viability of investment and 5) Market orientation. An important aspect of economic sustainability is precisely defined market and market orientation. The above-mentioned indicator of economic sustainability may be achieved by researching the preferences and perceptions of potential customers, mostly tourists visiting Croatia during the summer months, and meeting their needs. Tourists at respective destinations can be seen as part of the local community during their holidays (Amerta et al., 2018) and as a potential community for the consumption/purchase of local products (Sims, 2009) and export of products (Madaleno et al., 2017). In other words, economically and sociologically, tourists represent an important part of the society and economy for Croatia (Pavlić et al., 2014). However, in order for olive oil production in Croatia be sustainable in the long term, it is also necessary for more and more olive growers to switch to organic production based on environmentally friendly principles. Moreover, it is an interesting fact that ever more consumers attach importance to consuming eco-labelled products (Meis-Harris et al., 2021; Du et al., 2017), which is an additional incentive for producers to switch to sustainable, environmentally friendly practices when growing olive trees.

Nonetheless, an important point when talking about sustainability is to communicate it. In response, labels play an important role in promoting sustainable production. The best-known labels are eco-labels, which are used to encourage customers to choose organic products and thus promote environmentally sustainable practices through their purchases (Lavallée and Plouffe, 2004). The use of eco-labels in the global market is increasing, or rather, the number of farmers using sustainable practices (Brzezina et al., 2017) and labelling their products with an eco-label is increasing. A similar trend can be observed in Croatia, where the number of organic producers is growing: in 2016 there were 3.546, in 2017 there were 4.023 and in 2018 there were 4.374 producers in total (Croatian Bureau of Statistics, 2017, 2018). At the same time, the area under cultivation increased from 1.536 ha in 2016 to 1.750 ha in 2017, in 2018 the total was 1.872 ha and in 2019 the total was 1.888 ha of organic olive groves (Croatian Bureau of Statistics, 2017, 2018, 2019).

Virgin olive oil, produced mechanically from olive (*Olea europaea* L.) fruits, is highly appreciated for its unique flavour, as well as for its healthy and nutritional properties, mainly associated with high monounsaturated oleic acid content and a broad range of biological active minor components, such as phenols. According to the quality parameters, in the EU, there are two categories of virgin olive oils fit for consumption as they are: extra virgin olive oils (EVOO) and virgin olive oils (VOO) (EEC,

1991). Beneficial health effects (cardiovascular, anti-inflammatory, neuroprotective, anti-cancer, antioxidant, and anti-microbial) reported in many studies are mostly associated with dietary consumption of the highest quality category oils, EVOOs (Karković, Marković et al., 2019; Celano et al., 2019). In addition, the aforementioned benefits are used in marketing campaigns to promote the consumption of olive oil (Neves and Pires, 2018). However, olive oil consumption varies across countries within the EU. In general, consumption is higher in the Mediterranean region, with Spain leading with 514.8 thousand tons per year, followed by Italy with 398.7 thousand tons, further down is Greece with 123.1 thousand tons, then France with 108.3 thousand tons, while other Mediterranean countries (Cyprus, Malta, Portugal, Slovenia) have a consumption of fewer than 100 thousand tons (IOC, 2019). In continental Europe, Germany stands out with 49.6 thousand tons per year, Belgium with 18.4 thousand tons and the Netherlands with 17.3 thousand tons, while other countries have a consumption of less than 10 thousand tons of olive oil per year (IOC, 2019). The International Olive Council (IOC) forecasts a 6.4% year-on-year increase in demand for olive oil in 2019/2020, i.e. consumption of 3.094 million tons of olive oil.

In this context, Croatia has a great potential to become a real competitor in the olive oil market due to its remarkable geographical location as an export hub, which means proximity to important European markets such as Germany, Austria, Italy and others. In addition to the geographical advantage, a large number of Europeans visit Croatia during the summer months, when Croatian farmers get the opportunity to present and sell their products to a large number of customers from different European countries, which is alternatively called invisible export through tourism (Kitanov, 2021; Minciu, 2008). In addition, significant efforts have been made in recent years to increase the quantity and quality of Croatian olive oils through various development projects (D'Auria et al., 2020), primarily aimed at increasing the area under olive trees and applying modern production technologies in plantations and in olive oil processing and storage.

Consumers of olive oil can generally be divided into two broad groups based on the traditional diet. Namely, those who traditionally consume olive oil as the main source of fat in their diet, or territorially speaking, the inhabitants of the Mediterranean region, and the others who do not fall into this category. The second group of consumers is not used to consuming olive oil in their diet, but has started to do so because of the health benefits of olive oil. In order to promote the health benefits of a product and increase its sale, most advertising campaigns aim to influence consumer attitudes towards the product (Fatkullin et al., 2021; Bettinghaus, 1986). In researching product-to-consumer relations, consumers' perceptions and preferences towards the product are more often investigated.

In marketing, perception is the consumer's impression and awareness of a product or service. Similarly, Brown (2006) describes perception as a process of selection, processing, and interpreting environmental input data to make them applicable.

Moreover, consumer preferences for olive oil are influenced by the importance of intrinsic and extrinsic attributes of the products, which consumers value differently (Dekhili et al., 2011), so manufacturers need to adapt the product accordingly to achieve better acceptance among potential customers.

In order for Croatian olive oil producers to successfully position their oil both as an attractive local product at the destination and as a valuable product on the European market, they should understand their foreign customers.

The aim of this study is therefore to explore the perceptions, preferences, and behaviour of foreign tourists towards Croatian olive oil and to identify different consumer segments that should be targeted in order to run a sustainable business based on economic sustainability. The results obtained will provide important information for a better understanding of the market needs, i.e. the expectations and demands of today's consumers.

MATERIALS AND METHODS

Data collection on a sample of tourists is also characteristic of agri-food market development (Alebaki et al., 2015; Sabbatini et al., 2016). Primary data for this research were collected through a survey of a sample of tourists during their stay in Istria and Primorje - Gorski Kotar County, Croatia. The field data collection was conducted in the period from July to October 2019. The place where the data collection was conducted is known for three olive oils with PDO named "Istra" in Istria County and "Ekstra djevičansko ulje Cres" and "Krčko maslinovo ulje" in Primorje-Gorski Kotar County. Also, in these counties it is possible to find a few dozen olive oils with an eco-label on the market, meaning that the olive oils have been produced following ecological principles and the production process has been regulated by the competent authority involved in approving eco-labels featured on packaging.

Data collection was carried out by trained interviewers. The sample was collected in 12 tourist establishments (8 hotels and 4 campsites). In the case of data collection at hotels, the researchers were stationary in a specific location, while the respondents were mobile. In camp data collection, the situation was reversed (Veal, 2006). The researchers approached the respondents and explained the purpose of the study, stressing that the study was voluntary and anonymous. The respondents who agreed to participate in the research were given a questionnaire. The questionnaires were available in a total of 5 languages covering the visitors' language areas (English, German, Italian, Slovenian and Croatian).

A total of 250 questionnaires were disclosed, of which 186 were included in the data processing after the collected questionnaires had been processed. The questionnaire was structured and consisted of 4 question blocks, namely: (1) perceptions towards Croatian olive oils compared to oils from other countries, (2) importance of intrinsic and extrinsic attributes of olive oil, (3) behaviour towards Croatian olive oils during holidays and (4) socio-demographic characteristics of the respondents. Perceptions and attributes were measured on a 5-point scale, while multiple answers were enabled or were open-ended for other questions.

Data were analysed using R 4.0.3 (R Core Team, 2020). First, descriptive statistics were used to understand the general profile of the participants. Second, correlation tests were applied to understand whether the constructs of the theoretical model presented in the previous session explain behaviour related to olive oil consumption in general and willingness to buy Croatian olive oil.

Considering the main objective of this research, that is to understand the reasons why consumers buy Croatian olive oil, a probit model was applied by using the generated linear function to understand the relationship between the dependent variable (Do you buy Croatian Olive oil?) and the independent variables (intrinsic and extrinsic olive oil characteristics and attitude towards Croatian olive oils).

Since we assumed that there is a relationship between the purchase of Croatian olive oil and the consumption of olive oil in general, an ordered logit (OL) model was used to understand the factors that influence the consumption of olive oil. The statistical model OL was chosen due to the nature of the dependent variable (olive oil consumption), which was measured using an ordinal scale, and the nature of the relationship between dependent and independent variables (intrinsic and extrinsic olive oil characteristics).

The study proposed a scale to compare Croatian olive oils with oils from other countries and verified its value by Cronbach alpha reliability estimation. In addition, to monitor preferences better following the 10 chosen intrinsic and extrinsic olive oil characteristics, principal component analysis (PCA) with Varimax rotation was used to maximise the sum of variances of squared loadings, keeping coefficients exceeding 1 (Kaiser, 1960).

With the extracted components, two-stage cluster analysis was used to perform segmentation of the sample. Further segmentation was performed based on the respondents' attitude towards Croatian olive oil, with the aim of identifying suitable segments for planning marketing activities. Finally, a chi-square test was

conducted to test the differences among the identified clusters.

RESULTS AND DISCUSSION

A total of 250 people responded to the questionnaire. However, after eliminating observations with missing values, the results of this study refer to 186 observations. The selected demographic attributes are presented in Table 1.

As the Table 1 shows, most of the participants were female (56.5%), with an average age of 42 years. Regarding the level of education, most of the participants have a university degree and only 2.2% have primary education. Regarding other socio-demographic data, the majority of participants are employed with a monthly income between €1.501 and €2.500.

As can be seen in Table 1, the participants were all from European countries, especially from North-Central Europe and neighbouring countries. Moreover, as Table 1 shows, more than half of the participants bought Croatian olive oil while visiting the country. Lastly, 42.5% of the participants consumed olive oil several times a week, and 34.4 % daily.

As Table 2 shows, participants had a relatively neutral perception of Croatian olive oil and the robustness of the scale was strong with a high Cronbach's alpha.

Furthermore, it is important to understand the factors that influence the purchase of Croatian olive oil. Therefore, as mentioned in the methodology section, in this study the authors applied a probit model to identify these factors. However, it was first relevant to reveal the participants' perception towards Croatian olive oil.

Table 3 shows factors influencing the purchase of Croatian olive oil. As mentioned earlier, the variables included in this model were extrinsic and intrinsic characteristics of olive oil and perception of Croatian olive oil. As the results show, all factors were positively correlated with the purchase of Croatian olive oil. Participants who purchased Croatian olive oil had a higher appreciation for olive oil with the eco-label and for extrinsic properties of olive oil. These results confirmed recent studies on consumers showing a higher affinity for olive oils with eco-labels (Giannoccaro et al., 2019). Respondents with a more positive perception of Croatian olive oils in terms of better quality and taste were more likely to purchase them. In addition, it is important to mention that, considering the theoretical model, other characteristics of olive oil did not influence the intention to purchase Croatian olive oil among participants.

Another aim of the present study is to understand whether intrinsic and extrinsic characteristics influence the consumption of olive oil in general. The author conducted an ordered logit model. The results are presented in Table 4.

The obtained results suggested that olive oil consumption was influenced by taste, olive oil category and country of origin (Table 4). Previous studies have found that taste is a key attribute that determines the preference for a product and its consumption (Ballco and Gracia, 2020; Lukić et al., 2018; Tuorila and Recchia, 2014). The category of olive oil, directly related to quality, also affects the consumption of olive oil, as confirmed by the results of the model in Table 4. The country of origin is usually an important extrinsic olive oil attribute that influences consumers to buy the product (Chamorro-Mera et al., 2020).

In addition, it was seen relevant to understand if there were differences in preferences based on the country of origin. Considering that there was a high range of countries the participants were divided into two groups, participants coming from the Mediterranean and countries which share borders with one of the Mediterranean countries and other countries. Since data were not normally distributed, a Wilcoxon test was applied instead of a t-test (Table 5). The data show that there is a difference in colour, eco-label presence, protected designation origin, origin, and method of production. These results indicate that preferences for some characteristics of olive oil differ between the two groups of countries -- the Mediterranean and neighbours and the rest of EU countries.

Table 1. Socio-demographic characteristics and behaviour toward olive oil of the participants

Characteristics		Percent of Total (%)
Gender	Female	56.5
	Male	41.4
	Prefer not to say	2.1
Age (Median, SD)	18-30	15.6
	31-50	60.7
	51-60	16.7
	Older than 60	7
Education level (Median)	Primary school	2.2
	Secondary school	26.3
	Faculty	42.5
	Master's degree or higher	29.0
Emoloyment status (Median)	Self-employed	16.7
	Employed	73.1
	Retired	5.4
	Student	4.3
	Unemployed	0.5
Income euro/month (Median)	< 700	5.9
	700 – 1.000	7.0
	1.100 – 1.500	25.8
	1.501 – 2.500	31.7
	2.500 +	29.6
Country of origin (Median)	Austria	25.3
	Germany	18.3
	Italy	13.4
	Slovenia	11.3
	Netherlands	5.4
	Poland	2.7
	Slovakia	2.7
	Czech	1.6
	Others	19.4
Olive oil consumption (Median)	Several times per year	11.3
	Several times a month	14.0
	Several times a week	42.5
	Daily	34.4
Buy olive oil in Croatia	Yes	66.7
	No	33.3

Source: Authors

Table 2. Perceptions towards Croatian olive oil

Perceptions	Mean	SD	MIN	MAX
Olive oil from Croatia is of better quality than other olive oils consumed by responders	2.97	0.75	1	5
Olive oil from Croatia tastes better than other olive oils consumed by responders	3.04	0.73	1	5
Olive oil from Croatia is healthier than other olive oils consumed by responders	2.90	0.67	1	5
Cronbach alpha coefficient	0.88			

Source: Authors

Table 3. Factors affecting the purchase of Croatian olive oil

Independent variable		Dependent variable Buy olive oil in Croatia
Extrinsic characteristics	Olive oil with eco-label	0.214**
Attitudes towards Croatian olive oil	Olive oil from Croatia is better quality than other olive oils consumed by responders	0.407**
	Olive oil from Croatia tastes better than other olive oils consumed by responders	0.328*
Observations		186

Note: *P<0.1; **P<0.05; ***P<0.01

Source: Authors

Table 4. Factors affecting the consumption of olive oil

Independent variable		Dependent variable Olive oil consumption
Intrinsic characteristics	Taste	0.236***
Extrinsic characteristics	Olive oil category (virgin, extra virgin)	0.137***
	Country of origin	0.126***
Observations		186

Note: *P<0.1; **P<0.05; ***P<0.01

Source: Authors

However, the data did not find any differences regarding other intrinsic characteristics such as aroma, nutritional values, and taste. In addition, among extrinsic characteristics, no difference was identified in price and packaging. Finally, regarding perceptions of Croatian olive oil, no differences were found.

In order to categorize the participants based on the importance they give to the intrinsic and extrinsic olive oil attributes, PCA was first performed to reduce the number of variables. The results are shown in Table 6 and found 3 factors which can be named as follows: Factor 1 - Extrinsic characteristics, Factor 2 - Intrinsic characteristics, Factor 3 – Price.

The identified components represent input variables for the segmentation of the sample (Table 6). The two-step cluster dendrogram analysis generated 4 clusters whose results are shown in Figure 1.

Table 5. Results of Wilcoxon test

Variables combined with Country of Origin of the respondents	P-value
Price	0.3369
Package	0.2600
Colour	0.0013***
Taste	0.3325
Aroma	0.2691
Nutritious characteristics	0.9248
Olive oil category	0.3321
Description of the production	0.0090***
Eco-labelling	0.0013***
Origin	0.0002***
Method of production	0.0088***
Buy Croatian olive oil	0.9650
Better quality (Croatian olive oil)	0.9089
More expensive (Croatian olive oil)	0.1799
Tastes better (Croatian olive oil)	0.5561
Is healthier (Croatian olive oil)	0.5657
Higher availability	0.0537*

Note: *P<0.1; **P<0.05; ***P<0.01
Source: Authors

Table 6. The identified components with PCA

Component/item (%) of cumulative explained variance	Mean	SD	Factor loading	Cronbach α
Component 1: Extrinsic characteristics (46%)				
Package	3.1	1.06	0.336	
Protected designation of origin	3.7	1.11	0.852	
Presence of eco-label	3.7	1.06	0.753	0.82
Origin	3.6	1.11	0.724	
Method of production	3.9	1.15	0.555	
Component 2: Intrinsic characteristics (12%)				
Colour	3.7	0.97	0.471	
Taste	4.5	0.81	0.765	
Aroma	4.3	0.87	0.880	0.82
Nutritional values	4.3	0.86	0.605	
Olive oil category	4.1	0.99	0.485	
Component 3: Price (10%)				
Price	3.4	0.9	0.458	

Source: Authors

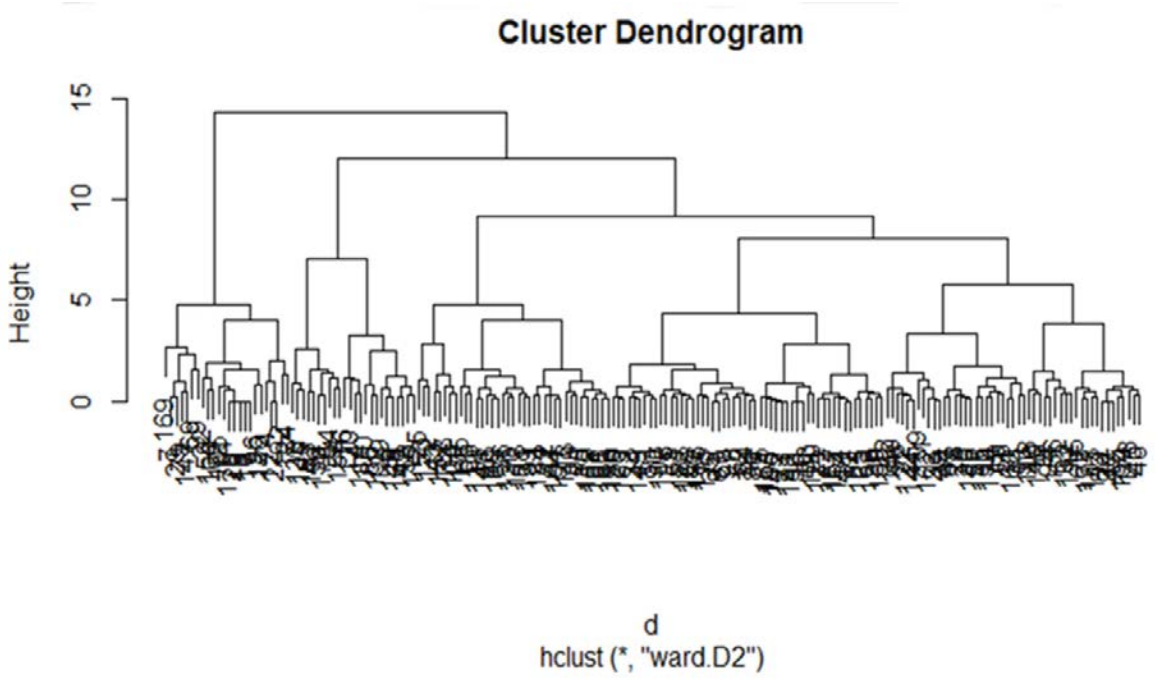

Figure 1. Dendrogram with 4 clusters

Cluster 1 "The experts", (80 participants, 43%)

The data show that "The experts" generally attach particular importance to all the characteristics of olive oil, with taste and production method having the highest importance, while price and packaging are less important, albeit with a medium to high rating of 3.4 out of 5. This cluster has a slightly higher proportion of male respondents, between 30 and 50 years old, mostly university graduates, employed, with an income between 1.001 – 1.500 euros, and who consume olive oil several times per week.

Cluster 2, "Indifferent consumers", (32 respondents, 17%)

Cluster 2, "Indifferent consumers", had the lowest scores regarding the intrinsic qualities of olive oil, although they had a medium level of evaluation. Members of this cluster consider the presence of eco-label and the nutritional characteristics as the most important, while some intrinsic and extrinsic characteristics of olive oil such as aroma, colour, packaging, production method, and origin were considered the least important. Among members of this cluster, there are slightly more females, between 30 and 50 years old, with a secondary education, employed, with an income between 1.001 – 1.500 euros, and who consume olive oil several times per week.

Cluster 3, "Price sensitive", (46 participants, 25%)

This cluster largely evaluated intrinsic olive oil attributes as an objective measure for determining the quality of olive oil products. There consumers rate price higher than the other three clusters. Members of this cluster are mostly women, between 30 and 50 years old, with a higher level of education, employed, with an income above 2.500 euros and who consume olive oil very rarely, several times per year. Considering the highest income level of these participants, it is likely that they value expensive products more.

Cluster 4, "The gourmands", (28 participants, 15%)

This was the smallest cluster, and similar in many ways to the "Price sensitive" one. Members of this cluster tended to highly value the intrinsic qualities of olive oil. The "Price sensitive" give higher importance to price among all other clusters. The average member of this cluster is a female, between 30 and 50 years old, with a higher educational qualification, employed, and with an income of over 2.500 euros. They consume olive oil from several times per week to several times per year.

"The experts" and the "Price sensitive" clusters can be considered as relevant groups that should be taken into account for further research and possible interest-driven market segmentation for Croatian olive oil.

CONCLUSION

Olive growing and olive oil production are an important part of Croatian agriculture. Therefore, ensuring the sustainability of this production is a strategic objective of Croatian agriculture.

As the results of this study showed, many visitors buy Croatian olive oil during their stay in Croatia (66.7%), thus representing an interesting niche market. This study analysed the perceptions and behaviour of foreign tourist visitors towards Croatian olive oil in order to gain a better understanding of the needs of foreign markets, which is key to achieving partly economic sustainability.

Respondents who consume olive oil are more inclined to buy olive oils with recognizable features and this is a poorly acknowledged effect of consumer behaviour in buying olive oil. This study has shown that expressed preference towards the eco-label was a predictor of purchasing Croatian olive oil. This could be seen as a strong signal for producers to adopt more sustainable agricultural cultivation methods in the production of olives and olive oil. Also, the eco-label contributes to the diversification of product choice and encourages buyers to support organic production practices. Tourists with positive perceptions towards Croatian olive oil quality and taste were also found to be more prominent buyers of that oil. The importance of olive oil taste and category as well as the country of origin were found to be important predictors of olive oil consumption.

However, respondents in the present study were relatively neutral in their assessment of the quality, taste, and health-related aspects of Croatian olive oils

compared to other oils consumed by respondents. The segmentation of the sample based on the importance they attach to olive oil features generated a total of four clusters. The largest cluster was “The experts”, followed by “Price sensitive”, afterwards “Indifferent consumers”, and finally “The gourmands”. Potentially more interesting clusters with perceptions ranging from neutral to positive were: "Price sensitive" and "The experts". In contrast, the "Indifferent consumers" cluster, which had the potential to promote the production of more sustainable and organic products, was fairly neutral or uninterested in Croatian olive oil. A slightly lower opinion about Croatian olive oil was also found in the cluster "The gourmands". The most attention should be paid to the cluster "The expert", which values the eco-label on the bottle more than the remaining three clusters and is most likely to be the main supporter of sustainable practices in olive oil production. At the same time, however, the "Price sensitive" cluster held an interesting potential, as it paid the most attention to the intrinsic characteristics of olive oil, and members of this cluster had a high monthly income, which corresponds well with the characteristics of Croatian olive oils, especially high quality and relatively higher price compared to other oils on the market. Considering the high monthly income, it can also be stated that this cluster appreciates a certain product also for its price and probably accepts more expensive products as they consider them to be of higher quality than the rest.

The authors would like to emphasize that the extrinsic eco-label attribute has been shown to be a predictive variable influencing purchases in the case of olive oil purchased by foreign consumers in Croatia. This information should further encourage producers to start applying environmentally sustainable production practices in their olive groves with the aim of obtaining an eco-label for the olive oil produced. In order to improve the sustainability of olive production in Croatia, it is important to increase the number of hectares under organic cultivation. This would ensure to fulfil all three pillars of sustainability. Economic sustainability would be achieved through increased sales that would result from meeting consumer needs and desires for organic and healthy olive oil. The use of eco-label would also encourage the diversification of olive oil supply in the market.

Future marketing activities of Croatian olive oil producers should be mainly focused on two segments "The experts" and "Price sensitive". In addition, marketing strategies need to emphasize and promote the environmentally friendly production of olive oil in order to attract more foreign buyers and increase sales.

The results of this study may also be of interest to countries and producers oriented towards high-quality olive oils, but who are less focused on sustainable production. Hence, they are recommended to focus on product diversification.

In addition to the practical application of demonstrated results, it should be stressed that this is an explorative study that requires further and more detailed research that will exacerbate the problem of the causal link between perceptions and behaviour of foreign consumers towards Croatian olive oils. The limitations of this study concern a relatively small sample of respondents, as well as spatially limited data collection. The authors suggest further research on the identification of target segments of foreign consumers for Croatian olive oil, and the inclusion of olive oil tasting when carrying out surveys on a sample of consumers.

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