

## **MARKET PERSPECTIVES FOR SERBIAN PDO PRODUCTS IN THE REPUBLIC OF SERBIA**

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### **Abstract**

Protected designation of origin products can contribute both to consumers and producers, as well as to rural development. As high percentage of population in Republic of Serbia lives in rural areas, and agricultural sector is very important for the country, protected designation of origin products could bring many benefits for the country, rural population and rural development. The objective of the paper was to analyse potential of two Serbian products, with geographical indication, in the market in Republic of Serbia. Another objective was to understand who are consumers of these products and if they would pay for these products. These questions were explored in cases of two Serbian PDO products – Futog cabbage and Petrovac sausage, on the market in Serbia.

Keywords: protected designation of origin, food products, market perspectives, Republic of Serbia

### **INTRODUCTION**

There is a growing interest in the agricultural sector to produce differentiated products in order to avoid strong competition, with the main objectives to assure quality of the product to consumers, to improve incomes of farmers and to contribute to rural development by retaining population in less-favored areas. Because of that focus on quality issue, with emphasis on products as protected designation of origin (PDO) or protected geographical indication (PGI), has acquired such an important role within CAP (the Common Agriculture Policy) of today. Furthermore, the number of GI protected products in EU has been increasing, as well as their market.

The agricultural production is an important sector of Serbian economy. Agriculture greatly contributes to the overall values of its society, much more than it is the case in many other European countries. Beside, high amount of population in Serbia lives in rural areas. In order to enter and survive on EU market, Serbia had to implement agricultural quality policy, and within it geographical indication policy. The Law on protected designations of origin in Serbia exists from 2010 ("Official Gazette RS" № 18/2010). It is written completely in accordance to EU regulation 510/2006. There are not many certified products in Serbia, but their number has

been increasing over a decade. Beside, there is a question whether the population in Serbia is introduced about existence of this type of certificated products.

The objective of the research was to analyse potential of two Serbian products, with geographical indication, in the market in Republic of Serbia. Another objective was to understand who are consumers of these products and if they would pay for these products. These questions were explored in cases of two Serbian PDO products – Futog cabbage and Petrovac sausage, on the market in Serbia. To understand market perspectives both supply and demand side were analysed. Supply side analysis was a qualitative analysis. Field research was conducted with open interviews, in order to collect data about selected products, to get information from authorities and producers, in order to have enough information to continue research with consumers.

Demand side analysis was a quantitative analysis. Consumer surveys were conducted, in order to assess future perspectives for two products. Aspects that were analysed are Serbian consumers' behavior and attitudes towards PDO/PGI products; exploring the food consumers' preferences related to the geographically determined food; their attitudes towards the quality guarantee labeled food and if they are willing to pay for it. On the basis of data collected from consumers in Serbia, collected data were analysed quantitatively, by using cluster analysis.

Matching supply and demand side analysis together, i.e. strengths and weaknesses of the products, and their possible opportunities and threats on the market, with consumers' attitudes and preferences, some future indications for market positioning of these products could be proposed.

This paper and results can be beneficial for the future market studies for other Serbian PDO/PGI products, and also other quality label products. On the base results obtained in the research, clearer picture about market of typical, quality and especially PDO/PGI products in Serbia is gained.

## **THEORETICAL BACKGROUND**

GIs as an instrument for institutionalising collective reputation has very important role in protecting both the consumer (through addressing information asymmetries and quality) and the producer (by protecting reputation as an asset) (OECD, 2000). The presence of asymmetric information is common in agricultural markets. On agricultural markets product characteristics, including overall quality, usually cannot be discovered and known from the consumers prior to purchase and/or after consumption. Furthermore, regarding to GIs, it is presumed that some quality attributes are linked to the specific geographical origin and/or special methods of

production of the product. Those attributes consumers cannot determine prior to purchase the product and sometimes after consumption. PDO/PGI products can be considered a bundle of all three types of attributes: search attributes have specific features and an even greater role is played by experience attributes (ex. unique taste, texture and other sensory characteristics) related to higher quality of products. Such search and experience attributes are (or should be) all outcomes of a particular processing technique taking place in the specific place of origin (credence attributes) (Galli, 2011).

European Union protects by legislation product names with special link to territory and origin or to a production method since the 1990s (EEC Regulation 2081/92, EU Regulation 510/2006, EU Regulation 1151/2012). EU quality policy aims to protect the names of specific products to promote their unique characteristics, linked to their geographical origin as well as traditional know-how, so to prevent misleading indications of geographical source, to provide consumers better understanding of specific characteristics of the product and to protect regionally products and production methods from exploitation of reputation, imitation and deception (EU Commission, Menapace, Moschini, 2012., Chilla et al., 2020).

Consumers seem to be increasingly preoccupied with the quality of the food they purchase and have come to associate geographically labeled foods with high quality products and their reputation (London Economics, 2008). Because of that, consumers have increased demand for products that have such quality designations like PDO or PGI (Fotopoulos et al., 2009). Reasons for which consumers consider valuable labels are that they inform consumers that the expected quality of the product is provided and they assure the degree of quality and thus reduce the risk connected to the purchase decision (Menapace et al., 2009).

Factors that influence consumer behavior may be divided into three groups: properties of foods; individual, related factors (e.g., biological, psychological, and demographic); and environmental factors (i.e., economic, cultural factors, and marketing aspects (Steenkamp, 1997. as cited by Zisimos, 2016). Important factors for consumers are trust and good knowledge of the product (Calvo, 2001, Fearne, Hornibrook, Dedman, 2001, Velcovska, Sadilek, 2015, Bredahl, 2001, as cited by Zisimos, 2016). These factors reduce complexity and uncertainty when it comes to making a purchasing decision (Herrera, Blanco, 2011 as cited by Zisimos, 2016). The impact of trust and its correlation to the willingness to pay, is higher among consumers of PDO/PGI products (Herrera, Blanco, 2011, Yi Y, La , 2004 as cited by Zisimos, 2016).

In order to understand whether the consumers were willing to pay more for PDO/PGI labelled products, in terms of methodology, questionnaires and interviews were most often used. The results of these studies show that in most cases, consumers were willing to pay a premium for

PDO or PGI products (Török, Moir, 2020). Consumers are typically willing to pay more for GI products, but the size of the premium may show differences. (Török, Moir, 2020).

The relationship between the region-of-origin cue and consumers' goals and how they initiate, direct and terminate decision-making processes and behaviour. Marketing products using their region of origin is a viable and valuable strategy. Gaining fundamental insights into consumers' motives to purchase regional products and the processes underlying the purchase decision of these products, would enable marketers to develop, position and market regional products more effectively (van Ittersum, 2001). Consumer response to food labeling is that the consumer must perceive high eating quality in order for the food product to command a premium (McCluskey and Loureiro, 2003).

The welfare impact of GIs affects also producers, in situation of imperfect information and high-quality differences (Zago and Pick, 2004). For a producer, the possibility to signal quality and thus reputation means that a GI becomes a commercial asset for the firm, as in the case of trademarks (Grossman and Shapiro, 1988) and a valuable offensive marketing tool. The production under this scheme enhances quality, as well as imposes some standards, granting fair competition amongst producers (Sanjuan, 2002).

The economic rationale for protecting GIs fundamentally derives from the fact that place of origin may be used as a quality signal and that the resources of the region may be captured in the origin-labeled product as quality attributes (Pacciani et al., 2001). The informative meaning of the geographical name is emphasized in order to reduce information asymmetries. Where place of origin is used as an attribute, resources of the region are used to increase the value of the product (Pacciani et al., 2001).

The institutional framework in support of GIs provides a legal instrument for producers to achieve property rights to the differentiated product, because of preventing other producers from entering the market. GIs furthermore enable collective production and marketing. Enabling the achievement of economies of scale is an important dimension, as the majority of GIs are artisanal products produced in small scale production. Devising a common marketing strategy which allows these producers to reach a scale of production large enough to justify the investment in the differentiated product image, increases these products chances of success (Barjolle and Chappuis, 2000). By reaching conditions for successful differentiation, and maintaining the image among consumers and preventing imitations of the product, and also owing producers rights, expenses of production can be justified and profit can be achieved (Bramley, 2011).

GIs have a further potential income effect through its collective process of value creation. The PDO/PGI group of firms often includes numerous small businesses or industrial agricultural

cooperatives, and even industrial operators whose objective is not profit maximisation (Barjolle and Sylvander, 2000).

PDO/PGIs may contribute to rural development. Definition of PDOs/PGIs reflect a strong linkage between a product and its territorial origin in that the product derives its characteristics from the region's unique environment, including climatic and human factors. Protected GIs may contribute to rural development. PDOs and PGIs present the main pillar of the European Union's agricultural product quality policy and are seen as strong development tool for developing rural economies. The EU's perspective on GIs has been described as "a legal and commercial basis for development of rural areas, the preservation of cultural heritage [and] the promotion of small and medium firms in the rural economies context" (Sylvander and Allaire, 2008 as cited by Huges, 2009, Bramley 2011). The ability of PDOs/PGIs to strongly express locality leads to positive rural development dynamics (Pacciani et al., 2001). The valorization of typical products may work as a rural development tool which the local community may use, given that collective and shared strategies for the remuneration of the specific resources of the area are activated around the product (Pacciani et al., 2001).

There are very limited data available on the importance and market share of GI products. According to the DOOR database, Majority of GI products come from Mediterranean EU Member States (in descending order: Italy, France, Spain, Portugal, and Greece), and most of them are vegetables and fruits, cheese, processed or raw meat, and olive oil (Török, Moir, 2018., Jantyk, Török, 2020.). Based on the results of research conducted in 2010 (Chever et al., 2012), 60% of the GI production is sold in domestic markets. (Török, Moir, 2018). Therefore, the most important market for GI products is the domestic market of the country of production (Török, Moir, 2020).

The agricultural production is an important sector of Serbian economy. Agriculture greatly contributes to the overall values of its society, much more than it is the case in many other European countries. The agricultural sector employs, directly and indirectly, a large part of the total population of the country. Around 20% of total workforce is employed in agricultural sector, which presents 8% of total population. About 44% of the country's population lives in rural areas and find their most basic income in agriculture or in industries closely related to agriculture. The Law on protected designations of origin exists from 2010 ("Official Gazette RS" № 18/2010). It is written completely in accordance to EU regulation 510/2006. In Serbia until 2020, there were 57 food products that have been registered for designation of origin or geographical indication (zis.gov.rs). All of these products are registered in Republic of Serbia Intellectual Property Office.

According statistical facts and literature, there can be potential on Serbian market for food products with protected designation of origin. As for the majority of EU GI products, domestic market is the main market where these products are sold, it is very important to examine Serbian market and it's potential. It is important to understand who are the consumers of these products and whether and how much they are willing to pay for these products. By increasing the market and recognition from the consumer's side, producers could have more interest to produce and register products, which would have positive implication to rural development.

## **DATA AND METHODS**

Two Serbian PDO products were chosen for the research— Petrovac sausage and Futog cabbage.

In order to understand the market in Serbia and examine market perspectives for Serbian PDO products, both supply and demand-side were analysed. Supply side analysis was mainly conducted in order to get enough information to continue with consumers side analysis. Thus, research was divided into two parts. Supply side analysis was done using a qualitative analysis approach. Field research was conducted with open-ended questions by means of personal face to face structured interviews, in order to collect data about two chosen products, to get information from authorities and producers, in order to have enough information to continue research with consumers. Interviews were conducted with two representatives from Ministry of Agriculture, Forestry and Water Management of Serbia, and two representatives of producer associations. The transcripts of all interviews were further analysed by coding and categorization. Four categories of the SWOT analysis were used, firstly to identify the key aspects of system ability to ensure power and mark shortcomings in dealing with the changes in a surroundings, which are characterized by agriculture in Republic of Serbia, and secondly to identify current position of two products: Futog cabbage and Petrovac sausage. Strengths, weaknesses, opportunities and threats were identified for both products separately, on the basis of data collected from interviews with producers, by identifying advantages and disadvantages, as well as opportunities and threats of producers of these products from different aspects, such as: the way of the production, traditional knowledge, mechanization and technology level, scale of production, land resources, costs, supply chain, logistics, and social relations. Demand side analysis was a quantitative analysis. Consumer surveys were conducted, in order to assess future perspectives for two products. On the basis of data collected from consumers in Serbia, collected data were analysed quantitatively, by using cluster analysis. In order to collect data from the consumers, the decision was made to use the survey technique, by conducting the questionnaire.

Questionnaire explored following aspects: Consumer attitude towards specific product item; Consumer attitude about labeling, food quality; Consumer knowledge and trust toward

PDO/PGI scheme, Consumer interest and attitude regarding typical products, Consumer knowledge about Futog cabbage, and attitudes towards it, interest for buying the product and WTP, Consumer knowledge about Petrovac sausage, and attitudes towards it, interest for buying the product and WTP, Consumer personal profile (demographic and socio-economic attributes such as gender, age, education level, place of origin, and place of living). For creating survey, it was decided to use online survey site Survey Monkey. Questionnaire was provided online via e-mails and Facebook, and also by personal interviews in the marketplace. All surveyed persons were from Republic of Serbia. Sample is based on 251 responded questionnaires. Interpretation of the results is based on calculated mean values and frequencies of responses

In order to find out which type of consumers could be an interesting market target for the two products, and to trace their profile, associated as a whole set of characteristics, cluster analysis was done. Collected data were analysed by calculating frequencies, to have explanation of the samples. Before starting the cluster analysis, variables were chosen. Variables were questions from the questionnaire. Demographical and socio-economic variables were not taken into the cluster analysis process. Both the hierarchical and the non-hierarchical (k-means) techniques were used at different stages, as well as two step clustering method. As a first step, in order to determine how many natural groups exist in the sample, hierarchical cluster analysis was done. Looking at a dendrogram was helpful, in order to display the distance level at which there was a combination of objects and clusters. As a second step, in order to form the clusters actually, the k-means was used, a non hierarchical clustering procedure. In order to control results that are considering cluster numbers, two-step cluster analysis was also done. All analysis was done in statistical software package - SPSS program, version 17.0.

## RESULTS

Petrovac sausage is dried meat sausage, equable dark red color, with white grass parts. Sausage should have nice, not strong smell on smoke. Taste should be good, piquant chili, but no acid. For production of Petrovac sausage can be used only pigs breed "Landras", domestic white pig, 9 to 12 months old, with weight of 135-200 kg. Every household produce its own red hot pepper, that is special red hot pepper sort from Bački Petrovac, and preserve its own seeds. Producer of Petrovac sausage is Agricultural Cooperative "Kulen" from Bački Petrovac. History of production of Petrovac sausage comes from 18th century in the village of Bački Petrovac, and way of the production is preserved until these days.

Results obtained when interviews with producers were conducted are summarised in SWOT matrixes.

**Table 1** SWOT– Petrovac sausage

<p><b><u>Strengths</u></b></p> <ul style="list-style-type: none"> <li>• Tradition – sausage production exists and it is preserved in the same way for more than 200 years.</li> <li>• Experience of the producers – every sausage producer has improved the process of sausage production from his father and grandfather and they are doing in the same way for years.</li> <li>• Own impute production – households produce inputs on their own, so they are sure that ingredients are good and they do not need to search the market in order to buy them.</li> <li>• Good quality and Typicality – for the quality they have certificate from Research Institute Laboratories, and they also win medals on fairs.</li> <li>• Reputation in area and even some other countries - word of mouth.</li> <li>• Good relationships between members of the cooperative.</li> <li>• Near Novi Sad city – near big market.</li> <li>• Developed agricultural region</li> </ul>	<p><b><u>Weaknesses</u></b></p> <ul style="list-style-type: none"> <li>• Small, individual capacities for drying and preserving on all households and whole quantity cannot be produced in one time.</li> <li>• Small quantity of produced sausage - around 500 kg/household.</li> <li>• distribution channels are not developed – usually direct on farm or through cooperative, without professional and well connected traders (larger market chains).</li> <li>• Low investments in promotion activities – only internet and local manifestations.</li> <li>• Small number of households that produce pigs – just 50% of households have their own pigs, and other producers depend on them, which results with small quantity of produced pigs, and it can be limitation factor for sausage production</li> <li>• Low possibility in current situation to produce more sausages – because of producers' capacities.</li> </ul>
<p><b><u>Opportunities</u></b></p> <ul style="list-style-type: none"> <li>• Higher market demand than quantity of production – market is interested in product.</li> <li>• Higher price in respect of other similar products – possibility for producers to have higher income.</li> <li>• Cultural events – ideal opportunity to do promotion of the products.</li> <li>• Tourism development – with bringing people from different places that have never eaten Petrovac sausage, possibility for sale increases.</li> </ul>	<p><b><u>Threats</u></b></p> <ul style="list-style-type: none"> <li>• Pig prices vary every year – unstable price predictions and income generation.</li> <li>• Variation of cereals and animal feedings prices – makes production unstable.</li> <li>• Low interest from Ministries and public institutions to provide incentives – as Public bodies do not have special funds in budget to help all producers.</li> <li>• Lack of own resources and public subsidies – lack of possibility to increase production and tendency to decrease. Bank credits not accessible.</li> </ul>

Source: author's own presentation of the results

Although Petrovac sausage has many strong sides and potential opportunities, as old tradition, experience, good quality, many medals won on the fairs and with a possibility to expand sale, the production is still based only within small households with small capacities, and producers cannot produce bigger quantities. Another important point is that pig production in Serbia is instable, so interest in pig production is not constant, which influences Petrovac sausage production amount. So, there is possibility that higher market demand could not be satisfied.

Futog cabbage is registered both as fresh and acid cabbage, got from autochthon Futog cabbage population, with specific natural characteristics for fresh cabbage, and specific characteristics and way of production for acid cabbage. The long-duration selection was responsible for the creation of the population called Futog cabbage, which was important for the fresh consumption, and for souring, as well. Cabbage production in village Futog, has



tradition from 16th century. Fresh Futog cabbage, Futog cabbage population recognized on specific morphological characteristics, color, shape of the head, leaves overlapping, size of the root, leaf's nervature. Other important characteristic is amount of sugar that exists in fresh Futog cabbage, and that is very important for preparation of acid Futog cabbage. For acid Futog cabbage preparation quantity of NaCl is also important, as well as kalium-sorbate. Those characteristics differentiate Futog fresh and acid cabbage from other hybrid cabbages.

Analysis of the interviews with producer of Futog cabbage is presented with SWOT analysis.

**Table 2** SWOT - Futog cabbage

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Well-known name in Serbia and other nearby countries – consumers are already well informed about quality of Futog cabbage</li> <li>• Near Novi Sad city- near big markets</li> <li>• Tradition – cabbage production in village Futog exists for more than 200 years</li> <li>• Favorable climate conditions -benefit to the production</li> <li>• Other institutions are involved in promotion – which helps promotional activities and brings higher impact</li> <li>• Experience of the producers – every cabbage producer easily makes difference between Futog cabbage and hybrid cabbage</li> <li>• Good quality and Typicality –certificated from Research Institute Laboratories</li> <li>• Good relationships between members of the association</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Less resistant than hybrid - many producers keep producing hybrid cabbage</li> <li>• Hybrid cabbage yield is higher – many producers keep producing hybrid cabbage</li> <li>• Costs of the production are higher than hybrid - many producers keep producing hybrid cabbage</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Eating habits and tradition of Serbian population – eating acid cabbage in winter period is habitual diet in Serbia</li> <li>• High Domestic demand – as cabbage is in habitual diet there is high demand for both fresh and acid cabbage in Serbia</li> <li>• High foreign demand – export can be increased which can bring higher income to producers and name of Futog cabbage can be wider well-known</li> <li>• Manifestations and fairs – where promotions can be made, in order to increase the demand</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• There is low willingness of producers to replace hybrid production with Futog cabbage – because hybrid is more resistant, costs of the production are lower</li> <li>• Trade relations are not harmonized – many times there were frauds with using the name of Futog cabbage</li> <li>• Law regulation - there are frauds on market with using the brand name of Futog cabbage</li> <li>• Low support of governmental institutions</li> </ul>

Source: author's own presentation of the results

Futog cabbage production has a long tradition and it is well-known for many years. But, fraud in its name usage still exists. Also, there is possibility that demand for the acid cabbage could not be satisfied.

On the base of the results obtained from the consumer questionnaires; some major characteristics of the sample are described. About two third of respondents were women and one third were men. More than one out of four (27%) in the sample are young people between 20 and 34 years old; almost one half of respondents (47%) are people between 35 and 49 years old. 67% of the sample is highly educated. Monthly income, that is not high, can be one limiting factors for PDO/PGI products consumption and purchase for this sample

Analysing the demand side and the sample, it can be concluded that both products are recognized from the consumers, but name of Futog cabbage is more familiar to them. As in Serbian traditional diet both acid cabbage and dried sausages are present, majority of the respondents would buy both Futog cabbage and Petrovac sausage for the price similar to some other similar products. Furthermore, more than half of the sample would pay some level of higher price for both products. This is connected to interest of the sample for typical products, and also to their awareness of PDO/PGI scheme. Even though these products are familiar for the Serbian consumers, their PDO label is something new, consumers recognize the value that brings that label, and are willing to pay for it

Segmentation of the sample was created in order to ascertain the profile of consumers that show a stronger and more concrete interest in the two focus products. The analysis that was done highlights the existence of homogeneous groups of consumers, characterized by similar habitual daily diet attitudes, attitudes towards typical foods and products, perception and awareness of PDO/PGI scheme and attitudes towards two analysed PDO products – PDO Futog cabbage and PDO Petrovac sausage. These three different consumers groups can be identified as “consumers with strong interest in Futog cabbage and Petrovac sausage” (AI), which represents 28.7% of the sample; “consumers moderately interested in Futog cabbage and Petrovac sausage” (MI), that represents the largest part of the sample, 41.8%; and the third group “consumers not willing to pay more for Futog cabbage and Petrovac sausage” (NOPP) with 29.5% of the sample.

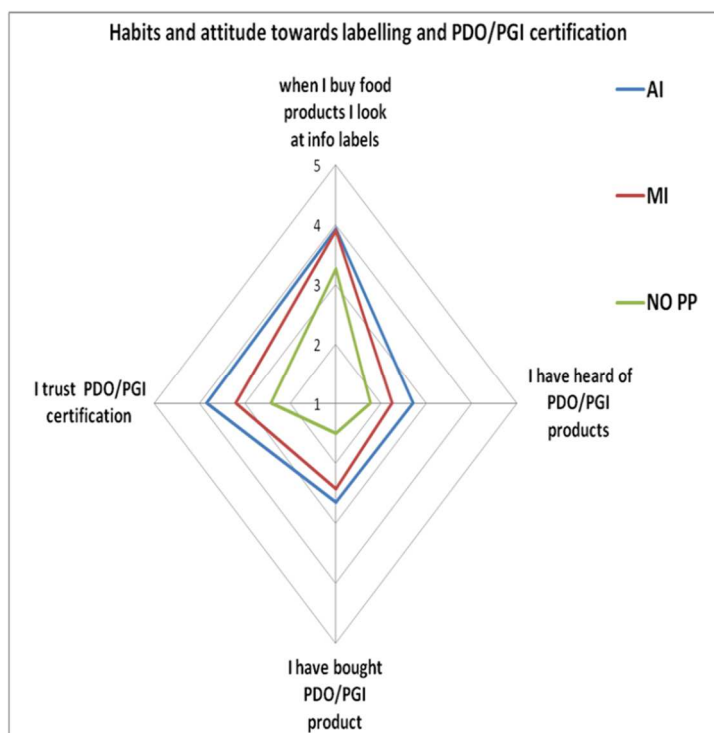
First cluster, that is made of “Consumers strongly interested in Futog cabbage and Petrovac sausage” (AI), is characterized by very high level of interest for buying both products, and paying extra price in range 10-20% for them. It represents 28.7% of the sample. These persons are mostly females, younger, between 35 and 45 years old, highly educated. Income of these persons is on higher level and they can permit themselves additional expenses for food. They express high level of interest for typical products, and are also aware of PDO/PGI scheme. They consume acid cabbage and dried sausages often, mostly because they like the taste.

Second cluster consists of “consumers moderately interested in Futog cabbage and Petrovac sausage” (MI). It represents the largest part of the sample, 41.8%. Moderately interested means

that these consumers would pay the same price for PDO sausage and Futog cabbage as for some other similar products. Although there is possibility that they would pay slightly more for both PDO Futog cabbage and PDO Petrovac sausage, than for generic substitutes. But this willingness to pay is lower than for persons from the first cluster. They eat dried sausages and acid cabbage but less frequently than persons from the first cluster do. They are young persons, with very high level of education, live in town, and with a work that brings income that can be considered as high in Serbia.

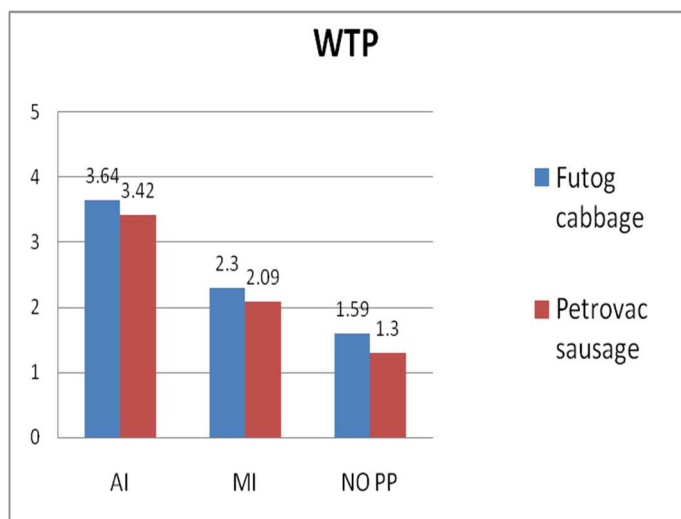
The third cluster, represented by “consumers not willing to pay more for Futog cabbage and Petrovac sausage” (NO PP) represents 29.5% of the sample. It consists mostly of women, older than 35 years old, with high school education, and families with 4 members. They work, but the salary is very low. They eat both acid cabbage and dried sausages, but only sometimes, even if they like their taste very much. Because of their diet habits, they would buy both products, but for the price which is not higher than for other similar products. Because of the low income they would not pay any extra price. Besides, also their awareness of PDO/PGI scheme is lower than in other two clusters. They do not show high interest towards typical products as persons from the first cluster do.

**Figure 1** Habits and attitude towards labelling and PDO/PGI certification – differences between clusters



Source: author's own presentation of the results

**Figure 2** Willingness to pay higher price for 2 PDO Serbian products – differences between clusters



Source: author's own presentation of the results

## DISCUSSION

Being aware of the consumer attitudes, producers can develop their strategies for positioning the products on the market. Besides demand side analysis, a supply side was analyzed as well. Supply side analysis was done in order to collect data of the two products, and to understand better position of the products on the market. Matching supply and demand side analysis together, i.e., strengths and weaknesses of the products, and their possible opportunities and threats on the market, with consumers' attitudes and preferences, some future indications for market positioning of these products could be proposed.

Before explaining demand side, some basic conclusions of the supply side should be mentioned, as they are very important for possibilities of positioning on the market. Both products, Petrovac sausage and Futog cabbage, have many strong sides and potential opportunities, such as old tradition, experience, good quality. But for both products, there is a limitation of expansion of produced quantity, especially for Petrovac sausage. Beside, there are still problems with using the name of these products by some other producers that do not produce these products.

Cluster analysis revealed the existence of three different groups of individuals with different daily diet habits and tastes, regarding dried sausages and acid cabbage, with a diverse degree of knowledge and interest in the typical attributes of foods and PDO/PGI certification, and different attitudes towards buying two selected PDO products. The first group includes people that like products, PDO Futog cabbage and PDO Petrovac sausage, and would pay higher price for both of them. The second group consists of people that do not show strong attitude, they consider the possibility to buy both PDO products and to pay higher price, but without defined

interest and attitude. The third group is made of people that definitely would not pay any higher price for these two PDO products.

Clusters consist mostly of females, as usually they do household shopping in supermarkets and markets. Age of the people in all three clusters is significantly different. In the first and second cluster around half of the population are in age group between 35 and 49 years old, and the third cluster has larger share of persons older from 65 years old, in respect to other two clusters. Income of the people from the third cluster is lower than income from the people from the other two clusters, as well as level of education. People from the first cluster are mostly females, with high level of education, young, with level of income higher than average in Serbia, and they show strong interest for purchasing both products and to pay extra price for both of them. Opposed to that, people from the third cluster are ones with lower level of income, which contributes the most to their willingness to pay more. Also their level of education is lower than level of education of people from other two clusters, and also their awareness of the PDO scheme is lower.

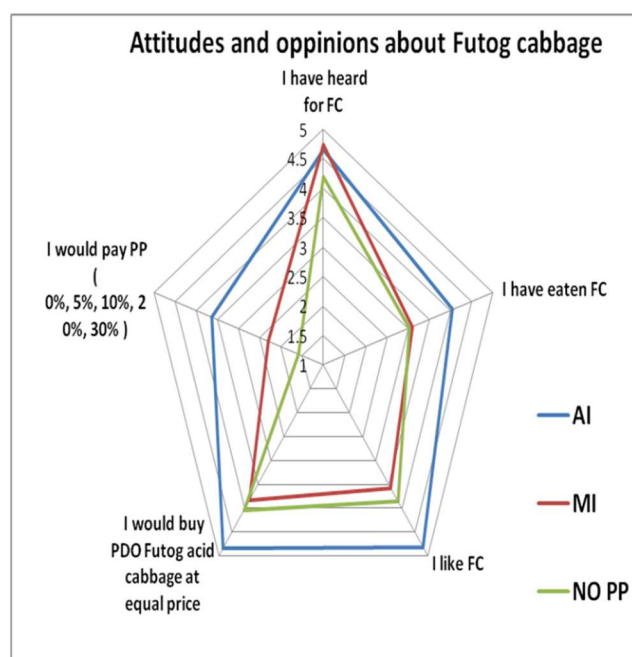
Looking at other characteristics and attitudes, clusters show peculiarities of interest for the research. Regarding daily habits and attitudes towards dried sausages, people from the first cluster eat them often (4.10), from the second - rarely (2.69) and from the third – sometimes (3.58). Besides, time for preparing dried sausages is very important for people in the first cluster (4.18), less important for the people in third cluster (3.42) and definitely not important for people in the third cluster (1.09). Also, for people from the first cluster a very important thing for eating dried sausage is the fact that they are used to have them in the habitual diet. People from all three clusters like to eat acid cabbage. And also, all of them have similar opinion about its nutritional value. But respondents from the first cluster eat it more often than respondents from other two clusters, and they like its taste more, (4.71) regarding second (3.61) and third cluster (4.09).

People from all three clusters have similar habits for looking info labels while buying food. Respondents from third cluster have lower level of awareness of existence of PDO/PGI scheme and thus lower trust into it. Respondents from first cluster have higher level of knowledge about PDO/PGI products. But although they are familiar with the scheme, they have not often bought these products, as well as respondents from other two clusters. But people from the first cluster have bought them sometimes, from the second rarely and from the third almost never.

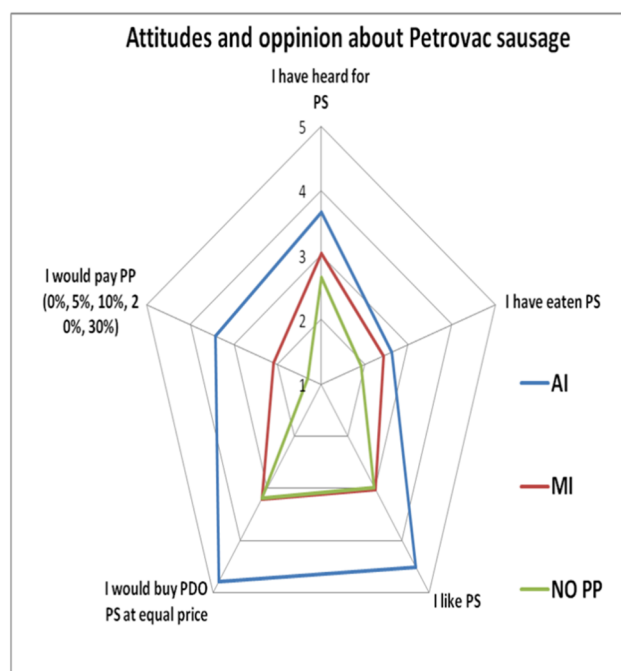
According to interest in typical products, variations and differences between clusters are not so big, but still differences exist. Respondents from the first cluster are more interested in typical products (4.31) than other two clusters (3.20 and 3.21)

It can be concluded that daily habits and preferences towards acid cabbage and dried sausages influence very much on purchasing decision for PDO Petrovac sausage and Futog PDO cabbage. People from the first cluster eat acid cabbage more often and find its taste very important for buying. They also like Futog cabbage very much. They are very convinced that they would pay equal price for Futog cabbage; even they are willing to pay 10% higher price for it than for some other acid cabbage. But also, this group has income that can afford buying some products that cost more because of the quality. People from the third cluster also like to eat acid cabbage, as well as Futog cabbage, but this group does not have level of monthly income that can afford any additional purchasing of products that are not just for satisfaction of their needs. They cannot afford buying extra quality products for higher prices. So, people from the third cluster would not pay any additional price for Futog cabbage. People from the second group eat less acid cabbage than people from first and third clusters. They have awareness of PDO/PGI scheme which is higher than people in the third cluster acknowledge, and they also trust it. Even more, level of income of people from the second cluster is higher than level of income of the third cluster. Although, presence of the acid cabbage is lower in their habitual diet than for other two groups, they would pay 5% higher price for PDO Futog cabbage. Reason for that could be found in awareness in PDO/PGI scheme and willingness to eat products of higher quality. The same situation is with PDO Petrovac sausage.

**Figure 3** Attitudes and opinions about Futog cabbage – differences between clusters



Source: author's own presentation of the results

**Figure 4** Attitudes and opinions about Petrovac sausage – differences between clusters

Source: author's own presentation of the results

## CONCLUSION

There is potential for Serbian PDO products on the market in Republic of Serbia. Results of the research and cluster analysis has shown that demand in Serbia for both PDO products, that has been examined, exists.

Petrovac sausage and Futog cabbage are products very well recognized by the consumers in Serbia. But they are famous not because of the certification, but because of tradition. As in Serbian traditional diet both acid cabbage and dried sausages are present, majority of the respondents would buy both PDO products for the price similar to some other similar products. Moreover, more than half of the sample would pay a higher price, to some extent, for both products. Furthermore, there is interest for typical products in Serbia. These products are mostly linked to tradition. Although PDO/PGI scheme is relatively new in Serbian market, people are aware of its existence. Considering other prices and expenses that people have, monthly income for sure can be one limit factor for PDO/PGI products consumption and purchase in Serbia.

Considering consumer demand for PDO/PGI products, it is important to adequately understand consumer segments. With adequate strategy 70% of the population would pay higher price for Futog cabbage and Petrovac sausage.

Consumers who have very high level of interest for buying both products, and paying extra price in range 10-20% for them, are mostly females, younger, between 35 and 45 years old, highly educated. Income of these respondents is on higher level and they can permit themselves

additional expenses for food. They express high level of interest for typical products, and, also, they are aware of PDO/PGI scheme. They consume acid cabbage and dried sausages often, mostly because they like the taste. Producers should focus on this group of consumers. As for this group both products are already familiar, and they have already purchased them, producers should keep them as consumers.

Consumers that are “moderately interested in Futog cabbage and Petrovac sausage”, represents the largest part of the sample, 41.8%. “Moderately interested” means that these consumers would pay the same price for PDO sausage and Futog cabbage as for some other similar products, although there is possibility that they would pay slightly more for both PDO Futog cabbage and PDO Petrovac sausage, than for generic substitutes. But this willingness to pay is lower. They eat dried sausages and acid cabbage but less frequently. They are young people, with very high level of education, live in town, and with a work that brings income that can be considered as high in Serbia. From a producer’s point of view these group of people should be market segment with a high potential. As it was already mentioned, from a literature view, people who are young, highly educated, and live in town, are more likely to buy PDO products. Also, income of this group would not be limitation factor. Besides, they like to eat these products. They are not so much interested into typical products, and marketing strategy for this group should be oriented on food quality. It is necessary to promote PDO/PGI scheme, as with higher level of awareness of the PDO/PGI scheme, their interest for these two products would increase. Besides, as this group of people has families and also prepare meals for them, and buy sausage and acid cabbage, because members of the family eat them, promotions that underline food quality addressed to children health can be taken.

There is still need to inform Serbian consumers more about benefits that PDO/PGI certification brings. With greater knowledge about the PDO/PGI certification, demand for two PDO products, and also willingness to pay for them, could increase. By more intensive promotion of the PDO/PGI scheme, consumers will be more aware about quality benefits of the products. Thus, they will be more interested in purchasing these products, and also, willing to pay more for them. That could have a positive impact on increasing producers’ income, also on involvement of other actors, and as a consequence it can enhance rural economy and rural development. It is necessary that Serbian PDO producers attend and expose on food and typical products fairs and manifestations.

By higher promotion for both producers and consumers, producers will find motivation to produce and to protect more traditional products. This could be motivation factor to remain in the rural areas. By enabling rural people to produce traditional food PDO/PGI products rural



development will be fostered. Republic of Serbia has very interesting history which is influenced also on food habits and food products. Besides, geographically there are various regions in which can be produced various types of products. Because of these facts here are many traditional food products in Serbia that could be protected and promoted as products with protected designation of origin or protected geographical indication.

On a theoretical level, this research provides a base for future researches related to Serbian products with geographical indications. On the base of the results obtained for these two products market perspectives for other Serbian PDO/PGI products, and also other quality label products can be predicted. Regarding to the results of detailed analysis for two selected products on both supply side, where production side analysis was described, and consumer analysis, with market segmentation technique as cluster analysis, future implications for other Serbian products with geographical indications can be assumed. This research provided clearer picture about market of typical, quality and especially PDO/PGI products in Serbia. It can be concluded that also other traditional, typical and well-known Serbian products could find place on the market in Serbia as PDO-/PGI products.

This research investigates market perspectives of two products at domestic market, where these two products are part of local cuisine. It would be interesting for future research to analyse market perspectives of these, or similar Serbian PDO products, in different foreign markets. It should be also taken into account for the future research to analyse market possibility of PDO products that are not from EU, in EU countries.

## REFERENCES

- Barjolle, D., & Chappuis, J.M. (2000). Transaction costs and artisanal food products. Proceedings of the Annual Conference of ISNIE (International Society for New Institutional Economics), Tuebingen (D) 22-24 September
- Barjolle, D., & Sylvander, B. (2000). *PDO and PGI Products: Market, Supply Chains and Institutions*. Final Report, FAIR 1-CT95-0306. June 2000. Brussels: European Commission.
- Bramley, C. (2011). A review of the socio-economic impact of geographical indications: considerations for the developing world, Paper prepared for presentation at the WIPO Worldwide Symposium on Geographical Indications June 22-24, 2011, Lima, Peru.
- Bredahl, L. (2001). Determinants of consumer attitudes and purchase intentions with regard to genetically modified foods: results of a cross national survey. *Journal of Consumer Policy*, 24, 23–61.
- Calvo, D. (2001). Analysis of Quality and Perceived Risk in the Buying Decision-Making Process of Food Products. Doctoral Thesis, Universidad de Coruna, Coruna, Spain
- Chever, T., Renault, C., Renault, S., & Romieu, V. (2012). Value of production of agricultural products and foodstuffs, wines, aromatised wines and spirits protected by a

- geographical indication (GI). European Commission, available at <https://op.europa.eu/en/publication-detail/-/publication/32b62342-b151-4bf3-8ba8-18568f37f43b#document-info>
- Chilla, T., Fink, B., Balling, R., Reitmeier, S., & Schober, K. (2020). The EU Food Label 'Protected Geographical Indication': Economic Implications and Their Spatial Dimension, *Sustainability*, 12(14), 5503; <https://doi.org/10.3390/su12145503>
- Council Regulation (EC) No 510/2006 of 20 March 2006 on the protection of geographical indications and designations of origin for agricultural products and foodstuffs, *Official Journal of the European Union*
- Elaborat o načinu proizvodnje i specifičnim karakteristikama proizvoda Futoški sveži kupus i futoški kiseli kupus (Elaborate about production and specific characteristics of Futog fresh cabbage and Futog acid cabbage)
- Fearne, A., Hornibrook, S., & Dedman, S. (2001). The management of perceived risk in the food supply chain: a comparative study of retailer-led beef quality assurance schemes in Germany and Italy. *International Food and Agribusiness Management Review*, 4: 19–36
- Fotopoulos, C., & Krystallis, A. (2001). Quality labels as a marketing advantage; The case of the 'PDO Zagora' apples in the Greek market, *European Journal of Marketing* 37(10), 1350-1374.
- Galli, F., Carbone, A., Caswell, J., Sorrentino, A. (2011). A Multi-Criteria Approach to Assessing PDOs/PGIs: An Italian Pilot Study, *Int. J. Food System Dynamics* 2 (3), 2011, 219-236
- Grossman, G., & C. Shapiro (1988). Counterfeit-product trade. *The American Economic Review*, March, 59-75.
- Herrera C.F., & Blanco C.F. (2011).. Consequences of consumer trust in PDO food products: the role of familiarity. *Journal of Product and Brand Management*, 20(4), 282–296
- Hughes, J. (2009). Coffee and chocolate: Can we help developing country farmers through geographical indications?, Report prepared for the International Intellectual Property Institute, Washington DC.
- Jantyik, L., & Török, A. (2020). Estimating the Market Share and Price Premium of GI Foods—The Case of the Hungarian Food Discounters, *Sustainability* 12(3), 1094; doi:10.3390/su12031094
- London Economics (2008). *Evaluation of the CAP policy on protected designations of origin (PDO) and protected geographical indications (PGI)*, Final Report, November 2008., available at <http://ec.europa.eu/agriculture/eval/reports/pdopgi/>
- McCluskey, J., & Loureiro, M. (2003). Consumer Preferences and Willingness to Pay for Food Labeling: A Discussion of Empirical Studies, *Journal of Food Distribution Research* 34(3)
- Menapace, L., & Moschini, G.C. (2009). Quality certification by geographical indications, trademarks and firm reputation. Iowa State University, WP n.09024, Department of Economics, nov. 2009.
- Menapace, L., & Moschini, G. (2012). Quality certification by geographical indications, trademarks and firm reputation. *Eur. Rev. Agric. Econ.* 2012, 39, 539–566
- OECD, (2000). Appellations of origin and geographical indications in OECD Member Countries: economic and legal implications, Working Party on Agricultural Policies and Markets of the Committee for Agriculture Joint
- Pacciani, A., Belletti, G., Marescotti, A., & Scaramuzzi, S. (2001). The role of typical products in fostering rural development and the effects of Regulation 2081/92. Paper prepared for presentation at the 73rd Seminar EAAE, "Policy experiences with rural development in a diversified Europe", Ancona, 28-30 June 2001.

- Pacciani, A., Belletti, G., Marescotti, A., & Scaramuzzi, S. (2001). The role of typical products in fostering rural development and the effects of Regulation 2081/92. Paper prepared for presentation at the 73rd Seminar EAAE, "Policy experiences with rural development in a diversified Europe", Ancona, 28-30 June 2001.
- Panin, B. (2013). Petrovac sausage and Futog cabbage: Market perspectives for two Serbian PDO's: a field analysis on Italian and Serbian consumers, PhD thesis, University of Tuscia, Italy
- Sanjuan, A. (2002). Second report on the link between OLP and consumers and citizens (WP4), DOLPHINS - WP4 Reports, Universidad Publica de Navarra, Spain, available at <http://www.origin-food.org/pdf/wp4/wp4-anne/wp4-a12.pdf>
- Steenkamp, J.B. (1997). Dynamics in consumer behaviour with respect to agricultural and food products. In: *Agricultural Marketing and Consumer Behaviour in a Changing World*. Kluwer Academic Publishers
- Sylvander, B., & Allaire, G. (2008). Strengthening international research on geographical indications: from research foundation to consistent policy, Paper presented at SINER-GI meeting June 2008
- Tehnološki elaborat o načinu proizvodnje i specifičnim karakteristikama proizvoda Petrovačka kobasica (Technological elaborate about production and specific characteristics of Petrovac sausage)
- Török, Á., & Moir, H.V.J. (2018). The market size for gi food products—evidence from the empirical economic literature. *Studies in Agricultural Economic*, 2018, 120, 134–142.
- van Ittersum K. (2001). The Role of Region of Origin in Consumer Decision-Making and Choice, summary of the thesis, available at <http://www.origin-food.org/pdf/db/ittersumk.pdf>
- Velcovska S, & Sadilek T. (2015). Certification of cheeses and cheese products origin by EU countries. *British Food Journal*. 117: 1843–1858. DOI 10.1108/BFJ-10-2014-0350.
- [www.webrzs.stat.gov.rs](http://www.webrzs.stat.gov.rs)
- [www.zis.gov.rs](http://www.zis.gov.rs)
- Yi, Y., & La, S. (2004). What influences the relationship between customer satisfaction and repurchase intention? Investigating the effects of adjusted expectations and customer loyalty. *Psychology and Marketing*, 2004; 21, 351–373
- Zago, A.M., & Pick, D. (2004). Labelling Policies in Food Markets: Private Incentives, Public Intervention and Welfare Effects. *Journal of Agricultural and Resource Economics* 29(1), 150-165.
- Zakon o oznakama geografskog porekla, "Sl. glasnik RS", br. 18/2010, (Law about geographical indications, Official gazette 18/2010)
- Zisimos, L. (2016). Olive Oils with Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI), Products from Olive Tree, Dimitrios Boskou and Maria Lisa Clodoveo, IntechOpen, DOI: 10.5772/64909. Available from: <https://www.intechopen.com/books/products-from-olive-tree/olive-oils-with-protected-designation-of-origin-pdo-and-protected-geographical-indication-pgi->