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Comparison of European Union quality labels utilization in Visegrad Group countries

Srovnání využití značek kvality Evropské unie v zemích Visegrádské skupiny

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Abstract

The paper focuses on European Union quality system known as Protected Designation of Origin, Protected Geographical Indication and Tradional Speciality Guaranteed used in agricultural and food products sector. The aim of the paper is to analyse and compare the utilization of these labels by Visegrad group countries. Firstly, the literature review dealing with the topical area is given. Further, the European Union quality scheme is specified and the comparison of Visegrad group countries according to selected criteria is provided. Empirical part of the paper involves marketing research results analysis and discussion. Data comes from the Database of Origin and Registration. The sample consists of all 93 product names registered as Protected Designation of Origin, Protected Geographical Indication and Traditional Speciality Guaranteed in the database by Visegrad group countries to the 30th April 2013. The frequency of using the labels is analysed according to type of label, country of origin and product class. Pearson´s chi-square test of independence and Pearson's and Cramer's contingency coefficients were used in order to confirm if significant differences do exist between variables.

Keywords: agricultural products, Database of Origin and Registration, food products, Protected Designation of Origin, Protected Geographical Indication, quality label, Traditional Speciality Guaranteed, Visegrad Group countries

Abstrakt

Příspěvek se zabývá systémem značení kvality Evropské unie užívaným pro zemědělské a potravinářské produkty, který zahrnuje značky Chráněné označení původu, Chráněné zeměpisné označení a Zaručená tradiční specialita. Cílem příspěvku je analyzovat a srovnat využití těchto značek v zemích Visegrádské skupiny. Nejprve je problematika zpracována v teoretické rovině, následuje specifikace evropského systému značení kvality a srovnání zemí Visegrádské

skupiny podle vybraných kritérií. Empirická část příspěvku zahrnuje analýzu a diskusi výsledků marketingového výzkumu. Sekundární data byla čerpána z databáze DOOR. Výběrový soubor obsahuje 93 názvů produktů registrovaných v této databázi zeměmi Visegrádské skupiny jako Chráněné označení původu, Chráněné zeměpisné označení a Zaručená tradiční specialita k 30. dubnu 2013. Četnost využití značek Chráněné označení původu, Chráněné zeměpisné označení a Zaručená tradiční specialita je analyzována podle typu značky, země původu a produktové třídy. K ověření existence statisticky významných rozdílů a stanovení síly závislosti mezi sledovanými znaky byl využit Personův chí-kvadrát test nezávislosti a vypočítán Pearsonův a Cramerův koeficient kontingence.

Klíčová slova: DOOR databáze, Chráněné označení původu, Chráněné zeměpisné označení, potravinářské produkty, Zaručená tradiční specialita, země Visegrádské skupiny, zemědělské produkty, značka kvality

Detailní abstrakt

Integrální součástí zemědělské politiky Evropské unie je snaha o zvyšování kvality a bezpečnosti zemědělských a potravinářských produktů. Mnohé z těchto produktů vykazují specifické charakteristiky vztahující se k jejich geografickému původu, tradičnímu způsobu výroby, využití tradičních surovin, či dalším kvalitativním benefitům. Tyto charakteristiky mají vliv na spotřebitelské vnímání produktu a nákupní rozhodování, přičemž v zemích Evropské unie je patrný rostoucí zájem spotřebitelů jak o kvalitní, tak o tradiční produkty. S cílem podpořit a ochránit výrobce produktů s přidanou hodnotou a usnadnit spotřebitelům výběr takových produktů zavedla Evropská unie v roce 1992 systém značek Chráněné označení původu, Chráněné zeměpisné označení a Zaručená tradiční specialita. Chráněné označení původu identifikuje zemědělské a potravinářské produkty, jež mají v dané zeměpisné oblasti původ a jejichž produkce, zpracování a příprava probíhají v této zeměpisné oblasti s využitím osvědčeného know-how a surovin pocházejících z daného regionu. Chráněné zeměpisné označení pokrývá zemědělské a potravinářské produkty z dané zeměpisné oblasti mající mají určitou jakost, pověst nebo jinou vlastnost, kterou lze přičíst tomuto zeměpisnému původu, a u nichž alespoň jedna fáze (výroba, zpracování nebo příprava) probíhá v dané zeměpisné oblasti. Tento způsob značení je tedy více benevolentní. Zaručená tradiční specialita se vztahuje na produkty, které jsou prokazatelně vyráběny po dobu nejméně 30 let, a to s použitím tradičních surovin, tradičního složení nebo tradičním způsobem výroby. Využití těchto značek je v jednotlivých zemích Evropské unie velmi různorodé. Zatímco některé země používají geografické značení a označování původu k informování o odlišné kvalitě produktu poměrně dlouho a s vysokou frekvencí, v jiných zemích se evropský systém značení vyskytuje minimálně a tyto země se více zaměřují na národní značky kvality. Cílem výzkumu, jehož výsledky jsou v článku prezentovány, bylo analyzovat a srovnat míru využití těchto značek v zemích Visegrádské skupiny, a to podle typu značky a země původu. Rovněž bylo sledováno, ve kterých produktových třídách jsou značky udělovány nejčastěji, a to jak celkově, tak v jednotlivých zemích. Data byla čerpána z databáze DOOR (Database of Origin and Registration), která obsahuje kompletní seznam názvů produktů registrovaných jako Chráněné označení původu, Chráněné zeměpisné označení a Zaručená tradiční specialita, v databázi jsou evidovány také názvy, pro které byla teprve podána žádost o registraci. K 30.

dubnu 2013 databáze zahrnovala celkem 1444 produktových jmen, z nichž 1146 již bylo registrováno jako Chráněné označení původu, Chráněné zeměpisné označení a Zaručená tradiční specialita, ostatní byly ve stavu žádosti čekající na posouzení a případné schválení. Do analýzy jsme zahrnuli pouze již zaregistrované názvy produktů, a to zeměmi Visegrádské skupiny. Výběrový soubor tedy zahrnoval 93 položek. K ověření existence statisticky významných rozdílů mezi frekvencí využití značek a dalšími kritérii byl využit Personův chí-kvadrát test nezávislosti a vypočten Cramerův a Pearsonův kontingenční koeficient. Na základě výsledků analýzy lze konstatovat, že země Visegrádské skupiny se na celkovém počtu značek registrovaných v databází DOOR všemi zeměmi Evropské unie podílejí pouze 8,11 %. Nicméně jsou zde rozdíly s ohledem na typ značky. U značky Chráněné označení původu mají země V4 podíl pouze 3,6 %, u značky Chráněné zeměpisné označení 9,7 %, ovšem u značky Zaručená tradiční specialita činí podíl zemí V4 52,7 %. V rámci zemí Visegrádské skupiny má pak nejvíce značek zaregistrováno Polsko následované Českou republikou. Celkově nejčastěji využívanou značkou v zemích V4 je Chráněné zeměpisné označení (57 % ze všech tří značek), počet značek Chráněné označení původu a Zaručená tradiční specialita je vyrovnaný (21,5 %). Existují však odlišnosti mezi jednotlivými zeměmi, přičemž je zajímavé, že Slovensko nemá ani jeden produkt registrován jako Chráněné označení původu a Maďarsko pro žádný produkt nezískalo značku Zaručená tradiční specialita. Nejvíce všech značek bylo registrováno v produktových třídách Masné produkty a Sýry. Zohledníme-li typ značky, pak u značky Chráněné zeměpisné označení dominují produktové třídy Sýry a Chléb, pečivo, koláče, u značky Chráněné označení původu je to Ovoce, zelenina a cereálie, značka Zaručená tradiční specialita byla nejčastěji udělována ve třídě Masné výrobky. V Polsku byly produkty nejčastěji registrovány v produktové třídě Ovoce, zelenina a cereálie, Česká republika získala nejvíce značek v produktové třídě Pivo, Slovensko ve třídě Sýry a Maďarsko má nejčastěji registrovány Masné produkty. Statistickým testováním byla prokázána slabá závislost mezi frekvencí využití značek a zemí původu, slabá závislost mezi typem značky a registrovanou produktovou třídou a silná závislost mezi zemí původu a registrovanou produktovou třídou.

Introduction

The paper deals with European Union food quality labels involving the Protected Designation of Origin (PDO), Protected Geographical Indication (PGI) and Traditional Speciality Guaranteed (TSG) labels and their utilization by Visegrad group countries. Its aim is to analyse and compare the frequency of using these labels in the Czech Republic, Slovakia, Poland and Hungary and to find out if some significant differences do exist among these countries; the comparison is conducted according to type of label, product class and country of origin. Paper is organized as follows: After literature review, specification of European Union (EU) quality labels system and a brief introduction of Visegrad group countries is given. Further, the data collection methodology is explained, followed by results analysis and discussion. The summary of main findings is presented in the last part of the paper.

An integral part of European Union agricultural policy is effort to improve agricultural and food products quality and safety. Many of these products exhibit special characteristics linked to their geographical area, traditional composition or traditional production method, they fulfil above standard quality criteria or they offer some other benefits. These characteristics have an impact on consumers´ food perception and

purchase decision making. Consumers in EU show growing interest in the quality as well as traditional products and it is necessary to reduce consumer uncertainty about food safety and quality and provide them relevant information in an understandable form (van Rijswijk and Frewer, 2008). Among the broad range of applicable tools of consumer policy, special attention have received quality labels (Grunert, 2005).

Labelling initiatives are quite specific because of their potential direct impact on consumer decision-making (Verbeke and Ward, 2006). On-pack product labelling is the typical way of informing consumers about food quality at place of purchase. Food quality labels, such as origin labels, geographical indications or other quality labels may be perceived as signalling a particular product specification and may represent some added value for consumers (Verbeke, 2012 cited in Klopčič, Kuipers, Hocquette, 2012, p. 14). These labels can be an important factor in consumer choice. Consumers may prefer a product from a certain geographical area simply because they believe to be better, or they may prefer product from their own region or country due to consumer ethnocentrism, i.e. their loyalty to region/country and their preference to support the local economy (Verbeke, et al., 2012). Broadly, quality labels informing consumers about specific product characteristics eliminate the misleading of consumers by non-genuine products, which may be of inferior quality (O'Connor and Company, 2005).

Quality labels may generate positive associations to product, they can assist consumers forming quality expectations, which in turn influence a whole range of attitudes and behaviours related to food purchasing. Consumers can make more informed choices about the food they buy. Labels may also increase consumer welfare through providing better consumer protection, and enabling choice to be better in line with preference. Finally, owing to their potential role with respect to product identification, labels can facilitate repeat purchases when satisfaction has occurred (Verbeke and Roosen, 2009, Verbeke and Ward, 2006, Krissoff, et al., 2004, Grunert, 2005). If the product holds a recognized label, it may be considered by consumer as a product with added value, having more quality or distinct character (Verbeke, et al., 2012). Furthermore, labels can help producers obtain a premium price for their authentic products (O'Connor and Company, 2005).

European Union quality schemes specification

The EU agricultural product quality policy concentrates on product qualities such as geographical origin, a product's traditional character or organic production method. To protect the reputation of agricultural products and foodstuffs with these specific characteristics, promote them, help producers obtain a premium price for their authentic products, and eliminate the unfair competition, since 1992 the European Union has protected the names of these agricultural products and foodstuffs through the system known as Protected Designation of Origin (PDO), Protected Geographical Indication (PGI) and Traditional Speciality Guaranteed (TSG) (EUFIC, 2013, European Commission, 2013a, O´Connor and Company, 2005).

Registered products must be labelled with the relevant logo which help consumers easily identify authentic products, see Figure 1.

Figure 1. PDO, PGI and TSG logo

Obrázek 1. CHOP, CHZO a ZTS logo

Source: European Commission, 2013b

PDO (Protected Designation of Origin) denotes agricultural products and foodstuffs which are produced, processed and prepared in a given geographical area using recognized skills and ingredients from the region. PGI (Protected Geographical Indication) covers agricultural products and foodstuffs closely linked by its quality and reputation to the geographical area in which at least one of the stages of production, processing or preparation takes place. The link with the area is stronger for PDO; PGI is a more flexible regulation. TSG (Traditional Speciality Guaranteed) highlights product's traditional character, either in the composition or production method. According to new Regulation on EU quality schemes for agricultural products and foodstuffs entered into force in the beginning of 2013, in order to be "traditional" proven usage on the market during at least 30 years (instead of 25) is now required. PDO and PGI cover agricultural products and foodstuffs as well as wine and spirits (there are different rules for wine and spirits, the paper deals with only with agricultural products and foodstuffs); TSG is concerned to agricultural farm products and foodstuffs (European Commission, 2013a, European Commission, 2013b, European Commission, 2013c, European Commission, 2013e, O´Connor and Company, 2005, Hocquette, et al., 2012 cited in in Klopčič, Kuipers, Hocquette, 2012, p. 69, Regulation (EU) No 1151/2012).

The scheme of PDO, PGI and TSG labels for identifying product quality and origin aims to (1) enable producers and other stakeholders to increase the value of their products by encouraging diversity and specificities of products in associations with local environments; (2) give consumers the possibility to choose quality foods with a special character and good taste. Thus the scheme encourages the development of rural areas and national regions, making it possible to maintain the dynamics of rural area through activity of local producers around common projects by mobilizing them around collective organizations for future progress. In this way, the implementation of a policy for labels identifying product quality and origins is expected to contribute to the socio-economic dynamics of local communities. It can be seen as a beneficial tool enabling regions to highlight more effectively the value of certain specific forms of traditional production (Ministry of Agriculture and National Institute of Origin and Quality, 2010). Finally, the scheme allows producers to differentiate their produce both locally and nationally and also, to an increasing extent, internationally.

According to Verbeke (2012 cited in Klopčič, Kuipers, Hocquette, 2012, p. 13), alongside numerous voluntary certification schemes, EU quality schemes allow for European consumers to obtain quality-guaranteed foodstuffs, and for European producers to differentiate their products in an increasingly competitive and globalized food market. While these qualities generally appeal to European food consumers,

several real or perceived barriers to increased purchase persist, such as price, availability or uncertainty with respect to the true production method or product character.

The protection of special agricultural products and foodstuffs is important for all EU countries. The natural diversity of the country together with cultural influence of neighbouring regions provided a heritage of many special products which merit protection. However, it is difficult, mainly for a small country, to mobilise financial and human resources to ensure the protection of their products (e.g. examine the products, register their names, and manage the control over the products). Moreover, they must assure that the system of protection is supported and promoted in all the actions concerning agricultural policy of the country (Sans, Lassaut, Čandek-Potokar, 2006).

The application and market presence of agriculture and food quality schemes is quite diverse across Europe. Whereas in some European regions the use of geographical indications to signal distinct product quality are dominant, other regions focus more on the development of collective quality marks which are also referred to as possible candidates for future format PDO or PGI registration (Verbeke, 2012 cited in Klopčič, Kuipers, Hocquette, 2012, p. 13).

The complete list of product names registered as PDO, PGI and TSG as well as names for which registration has been applied is included in the Database of Origin and Registration (DOOR database). The DOOR database project supports the agricultural product quality policy by providing a modern information technology system for the dissemination of public data with regard to registered PDOs, PGIs and TSGs through Europa (European Commission, 2013d, IDABC, 2013).

Visegrad Group countries comparison

The Visegrad Group, also known as the "Visegrad Four" or simply "V4", reflects the efforts of the Central European countries to work together in a number of fields of common interest within the all-European integration. All the V4 countries aspired to become members of the European Union, perceiving their integration in the European Union (EU) as another step forward in the process of overcoming artificial dividing lines in Europe through mutual support. They reached this aim in May 2004. Since 2007, they all became members of the Schengen area**.** All the activities of the Visegrad Group are aimed at strengthening stability in the Central European region (Visegrad Fund, 2013).

Comparison of V4 countries according to basic characteristics with accent to food products sector is given in Table 1.

Table 1. Comparison of V4 countries

Tabulka 1. Srovnání zemí V4

	Czech Republic	Hungary	Poland	Slovakia
Total area	78 866 km²	93 000 km²	312 679 km²	48 845 km²
Population	10.5 million	10 million	38.1 million	5.4 million
Currency	Czech crown (Kč)	Forint (Ft)	Zloty (zł)	EUR (€)

Food production turnover 2008[1)]	15 221 mil €	11 335 mil €	48 957 mil €	4 074 mil €
Share of food products import at total import 2011	7 %	7 %	9.8 %	7.9 %
Share of food products export 2011	5.5 %	9.2 %	12.1 %	5.9 %
Typical products	Beer	Meet products	Fruits, vegetables	Cheeses
National food quality labels	Klasa Czech Product - guaranteed by Federation of the Food and Drink Industries of the Czech Republic Regional Food BIO – product of organic farming	The Quality Food from Hungary HÍR - Traditions Tastes Regions Hungary Eco Guarantee	Try Fine Food Traditional Product Ekoland (Organic farming)	Quality Food SK Quality Food SK Gold Regional Product ECOagriculture

Note: [1)] Data comes from Eurostat (European Commission, 2011), later data are not available.

Source: World Trade Organization, 2013, European Commission, 2011, Food and Agriculture Organization of the United Nations, 2013, own processing

Even though, these countries are in one union, there are different not only in number of inhabitants, area or economic performance, but also at food products market. Typical products are various for each country, beer for the Czech Republic, meet products for Hungary, fruits and vegetables for Poland and cheeses for Slovakia. The foreign trade balance of food products varies from Poland, which is the most food manufacturing country with 12.1 % share of export, to the Czech Republic with 5.5 % only. On the other hand, the biggest food importer is also Poland with 9.8 % of domestic import; the lowest share has the Czech Republic and Hungary with 7 %. (World Trade Organization, 2013) There is apparently, only Poland and Hungary have positive trade balance (i.e. food export is higher than food import; 2.3 % for Poland and 2.2 % for Hungary); the Czech Republic and Slovakia have negative one (-1.5% for Czech and -2 % for Slovak Republic).

Regarding the food quality labels, alongside the European Union food quality labels scheme, each country has also its own national food quality labels which are only relevant in given country. National quality labels give to consumer the guarantee of superior product quality (Klasa or Czech Product in the Czech Republic, The Quality

Food from Hungary, Try Fine Food in Poland, Quality Food in Slovakia), geographical origin (Regional Food in the Czech Republic, HÍR in Hungary, Traditional Product in Poland, Regional Product in Slovakia) or organic origin of product (BIO in the Czech Republic, Hungary Eco Guarantee, Ekoland in Poland, ECOagriculture in Slovakia). They are usually awarded by Ministry of Agriculture, Federation of the Food Industry, etc. More about agricultural statistics mentions for instance Majkovič (2006).

There operate also other actors, non-governmental organizations, which complement or overlap EU activities. For instance, in the Czech Republic, the Czech Product label is kept by Federation of the Food and Drink Industries of the Czech Republic. In Poland, an example of this kind of organization is Ekoland Polska, which closely cooperate with ecologically oriented groups such Natura Food or Ekoconnect. In Hungary, non-governmental organizations play important role: Food safety and the protection of consumer interests are of increasing concern to the general public, non-governmental organisations, professional associations, international trading partners and trade organisations (Fehér, 2006). These organizations do not intend to compete with EU or national ministries of agriculture, but they want to complete possibilities of reaching more information. They mostly work at regional level and there are closer to consumer. Another typical feature is their focus on chosen area like ecological agriculture, regional or traditional food or on protection of more different products, but originated in certain country or area.

Materials and methods

Marketing research was conducted with the purpose to analyse the PDO, PGI and TSG labels utilization in Visegrad group countries market according to selected criteria including type of label, country of origin and product class. The protection of special agricultural products and foodstuffs is important for all EU countries. However, it is not easy, especially for smaller countries, to mobilise financial resources to ensure the protection of their products (Sans, Lassaut, Čandek-Potokar, 2006). Therefore, the research focuses on V4 countries as a special group of Eastern European countries. Another starting point for research purposes definition is the assumption that the perceived value of food and agricultural products is strongly influenced by the product category (Schröder, 2003). This could be related to the frequency of product names registered in the individual product classes. Furthermore, each country can be characterized by the production of a certain type of food and agricultural products. Based on these assumptions, specific research purposes were defined as follows:

- To analyse the share of product names registered by V4 countries on the total number of product names registered in the DOOR database,
- to compare the share of registered product names in V4 countries according to type of label,
- to compare the number of registered PDOs, PGIs and TSGs in V4 countries according to product classes,
- and to identify the most common product classes (according to numbers of product names registered in the individual product classes) in each country of V4.

The secondary data from the Database of Origin and Registration are used. By 30th April 2013, the database included total number of 1444 items, from which 1146 were registered as PDO, PGI or TSG; others are on waiting list and there is not sure if they would be accepted (European Commission, 2013c, European Commission, 2013d). We have to notice, in the database are not only European Union countries, but also China represented with 10 own product names certified with PDO and PGI labels, and Vietnam, Colombia, Thailand and India with one registered product name.

In our analysis, the attention was given to Visegrad group countries and we have calculated with registered items only, i.e. sample consists of 93 product names registered as PDO, PGI or TSG in the Czech Republic, Slovakia, Poland and Hungary, i.e. the whole target data identified for V4. Sample structure related to V4 countries is presented in Table 2.

Table 2. Sample characteristics (n = 93, in per cent)

Tabulka 2. Charakteristika výběrového souboru (n = 93, v procentech)

Country	Registered product names		Product class[1)]	Registered product names	
	Number	%		Number	%
Poland	35	37.63	1.2 Meat products	16	17.20
Czech Rep.	32	34.41	1.3 Cheeses	16	17.20
Slovakia	14	15.05	1.6 Fruits, vegetables, cereals	15	16.13
Hungary	12	12.90	2.4 Bread, pastry, etc.	14	15.05
Total	93	100.00	1.8 Other products - Annex I*	10	10.75
Type of label	Number	%	2.1 Beers	9	9.68
PDO	20	21.51	Other classes	13	13.98
PGI	53	56.98	Total	93	100.00
TSG	20	21.51			
Total	93	100.00			

Note: [1)] the most frequent product classes; * species, condiments, ciders, teas, etc.

Source: Own processing

As it is evident from Table 2, the highest number of product names has registered Poland followed by the Czech Republic. Based on type of label, the most frequent is PGI label; the number of PDOs and TSGs is balanced. Two dominant product classes are Meat products and Cheeses.

In every analysed category, there have been constructed contingency tables and we counted Pearson's and Cramer's contingency coefficients as well as Chi-square test in order to confirm or disprove of relations between variables. Some interesting findings are also presented in graphs.

Results analysis is based on the whole target data identified for V4 countries, i.e. 93 items. In the section of results dealing with V4 share on the total number of product names registered in the DOOR database, all 1146 items registered as PDO, PGI and TSG in the database are analysed.

Results and their discussion

Share of registered product names in V4 countries according to type of label

This part of analysis is based on the list of 93 product names registered in the DOOR database for the Czech Republic, Slovakia, Poland and Hungary. The distribution of PDO, PGI a TSG labels in V4 countries is presented in Table 3.

Table 3. Share of registered product names in V4 countries by type of label (n = 93, in per cent)

Tabulka 3. Podíl registrovaných produktových jmen v zemích V4 podle typu značky (n = 93, v procentech)

Country	PDO	PGI	TSG	Total
Poland	8.60	19.35	9.68	37.63
Czech Republic	6.45	23.66	4.30	34.41
Slovakia	0.00	7.53	7.53	15.05
Hungary	6.45	6.45	0.00	12.90
Total	21.51	56.99	21.51	100.00

Source: Own processing

It is evident, that the most frequent label in V4 countries is PGI; number of PDOs and TSGs is balanced. There are differences among countries; whereas Slovakia does not have PDO products, Hungary did not win TSG. The highest number of PGIs has obtained the Czech Republic, 40 % of them were granted to beer.

In order to discover reciprocal dependences of tracked characters, we proceeded Chi-square test at significance level $\alpha = 0.05$, when sig F= 0.04 and we can confirm variables depend reciprocally. Thereby, we accept hypothesis about the highest distribution of labels in Czech Republic and Poland, rather than in Slovakia and Hungary. Pearson contingency coefficient is 0.427 and Cramer's contingency coefficient 0.344, thus there is rather weak dependence between variables in the sample.

V4 countries share on the total number of product names registered in the DOOR database

By 30th April 2013, the DOOR database contained a total number of 1146 items registered as PDO, PGI or TSG by all countries, from which 93 product names were registered by V4 countries. Table 4 shows total numbers of PGIs, PDOs and TSGs received by all countries (1st row), numbers of labels registered for V4 countries (2nd row), and their shares on all registered labels (3rd – 7th row). These results comes

from the whole target data identified for V4 (93 items) and are related to the total number of 1146 items registered in the database.

Table 4. V4 countries share in the DOOR database based on number of product names registered as PDO, PGI and TSG

Tabulka 4. Podíl zemí V4 v databázi DOOR podle počtu produktových jmen registrovaných jako CHOP, CHZO a ZTS

Country	Number of cases			% from total number of all labels in the DOOR database
	PDO	PGI	TSG	
All countries in the DOOR database	560	548	38	1146
V4 countries in the DOOR database	20	53	20	93
V4 share in the DOOR database (%)	3.57	9.67	52.63	8.11
• Poland (%)	1.43	3.28	23.68	3.05
• Czech Republic (%)	1.07	4.01	10.53	2.79
• Slovakia (%)	0.00	1.28	18.42	1.22
• Hungary (%)	1.07	1.09	0.00	1.05

Source: Own processing

V4 countries share 8.11 % of all labels registered in the DOOR database. The highest share has Poland (3.05 %) and the Czech Republic (2.79 %). For comparison in EU area, the first three countries in the ranking according to number of labels registered in the DOOR database have obtained more than 50 % of all labels (as a sum of PDOs, PGIs and TSGs), in the concrete Italy has 22 % of all labels, France 17 % and Spain 14 %. The first six countries (Italy, France, Spain, Portugal, Greece, and Germany) then have 80 % of all cases. Obviously, the share of V4 countries is not too strong; also other members of EU have registered only low number of labels. It is interesting, that most of TSG labels belong to countries in weaker positions in the overall ranking, namely to Poland as a leader in number of TSGs, further to Slovakia, Belgium and the Czech Republic.

High share of TSG labels received by V4 countries is interesting. As it is evident from Table 4, V4 countries have received more than 50 % of all TSGs registered in the DOOR database, whereas their total share of all labels (as a sum of PDOs, PGIs and TSGs) is only 8 %. Moreover, 50 % share is gained only by three V4 countries; Hungary does not have TSG products. For comparison, the first six above mentioned EU countries in the ranking according to number of all labels registered in the DOOR database have only 13 % of all TSGs. Poland or Slovakia have certified more TSG products than the first six EU countries together.

Shares of PDO, PGI and TSG labels in each of V4 country are presented in Figure 2. For the Czech Republic and also for Poland, PGI labels are dominant. In Slovakia, 50 % of product names are registered as PGIs and 50 % as TSGs, Hungary has also 50 % share of PGIs, other 50 % products are PDOs.

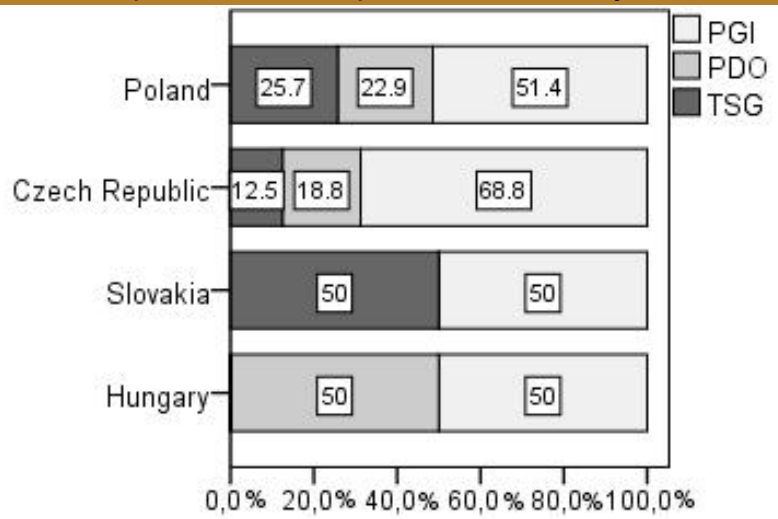

Figure 2. Numbers of PDO, PGI and TSG labels according to countries (in per cent)

Obrázek 2. Počty CHOP, CHZO a ZTS značek v jednotlivých zemích (v procentech)

Source: Own processing

Frequency of PGI, PDO and TSG labels in V4 countries by product classes

To analyse the using PGI, PDO and TSG labels in V4 countries according to product classes, the products classification specified in Council Regulation (EC) No. 510/2006 (for PGI and PDO) and Council Regulation (EC) No. 509/2006 (for TSG) was applied; the same classification is also used in the DOOR database. Table 5 summarizes numbers of product names (as a sum for all countries of V4) registered as PDO, PGI and TSG in the individual product classes. Fields with the largest number of registered product names under PGI, PDO and TSG are highlighted in grey colour.

Table 5. Numbers of PDO, PGI and TSG labels by product classes (n = 93, in per cent)

Tabulka 5. Počty CHOP, CHZO a ZTS značek v jednotlivých produktových třídách (n = 93, v procentech)

Product class	PDO	PGI	TSG	Total
1.1 Fresh meat	0.00	2.15	0.00	2.15
1.2 Meet products	1.08	4.30	11.83	17.20
1.3 Cheeses	3.23	11.83	2.15	17.20
1.4 Other products of animal origin (eggs, etc.)	1.08	3.23	0.00	4.30
1.5 Oils and fats	0.00	0.00	1.08	1.08
1.6 Fruits, vegetables and cereals	7.53	8.60	0.00	16.13
1.7 Fresh fish, crustaceans and molluscs	2.15	1.08	0.00	3.23
1.8 Other products of Annex I (species, etc.)	6.45	0.00	4.30	10.75
Total – Product class 1	21.51	31.18	19.35	72.04

2.1 Beers (valid also for TSG)	0.00	9.68	0.00	9.68
2.4 Bread, pastry, cakes and other baker's wares	0.00	15.05	0.00	15.05
2.3 Confectionery, bread, pastry, cakes and other baker's wares (only for TSG)	0.00	0.00	2.15	2.15
Total – Product class 2	0.00	24.73	2.15	26.88
3.5 Flowers and ornamental plants	0.00	1.08	0.00	1.08
Total – Product class 3	0.00	1.08	0.00	1.08
Total	21.51	56.99	21.51	100.00

Source: Own processing

Generally, two dominant product classes are Meat products and Cheeses, followed by Fruit, vegetables and cereals. Also Bread, pastry, cakes and other baker´s wares is frequent product class. With respect to type of label, the most common product classes are Cheeses and Bread, pastry, cakes and other baker´s wares for PGI, Fruits, vegetables and cereals for PDO and Meet products for TSG.

There has been proceeded Chi-square test to discover dependency of characters at significance level $\alpha = 0.05$, sig F = 0 and we can confirm, there are dependencies between variables. Pearson contingency coefficient is 0.427 and Cramer's 0.334, and there is rather weak dependence between variables in the sample.

Shares of product classes for each type of label are presented in Figure 3.

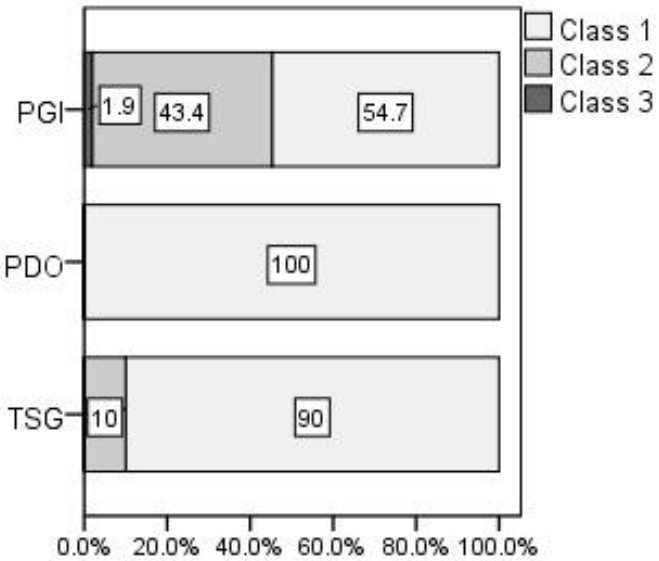

Figure 3. Product classes in PDO, PGI and TSG (in per cent)

Obrázek 3. Produktové třídy u CHOP, CHZO a ZTS (v procentech)

Source: Own processing

Only products involved in product class 1 were certified as PDOs. Product class 1 is dominant also for TSGs, minority of registered product names falls into product class

2. Regarding PGIs, there is relatively balanced share of products in class 1 and 2, and it is the only label involving products from class 3.

Comparison of V4 countries according to number of product names registered in the individual product classes

The last step of analysis involved V4 countries comparison according to number of product names registered in the individual product classes. The purpose was to find out which product class is the most typical in each country. The results are presented in Table 6, where shares of the individual product classes on total number of registered product names in each country are presented. Only product classes where the product names have been registered are included in the table. The main product class (with the highest number of registered product names) for each country is highlighted in grey colour.

Table 6. Numbers of labels in product classes by country (n = 93, in per cent)

Tabulka 6. Počty značek v jednotlivých produktových třídách podle země (n = 93, v procentech)

Product class	Poland	Czech Rep.	Slovakia	Hungary
1.1 Fresh meat	2.86	0.00	0.00	8.33
1.2 Meet products	11.43	12.50	28.57	33.33
1.3 Cheeses	14.29	9.38	57.14	0.00
1.4 Other products of animal origin (eggs, honey, etc.)	11.43	0.00	0.00	0.00
1.5 Oils and fats	2.86	0.00	0.00	0.00
1.6 Fruits, vegetables and cereals	25.71	9.38	0.00	25.00
1.7 Fresh fish, crustaceans and molluscs	2.86	6.25	0.00	0.00
1.8 Other products of Annex I (species, condiments, etc.)	11.43	9.38	0.00	25.00
Total – Product class 1	82.86	46.88	85.71	91.67
2.1 Beers (valid also for TSG)	0.00	28.13	0.00	0.00
2.4 Bread, pastry, cakes and other baker's wares	14.29	25.00	7.14	0.00
2.3 Confectionery, bread, pastry, etc. (only for TSG)	2.86	0.00	7.14	0.00
Total – Product class 2	17.14	53.13	14.29	0.00
3.5 Flowers and ornamental plants	0.00	0.00	0.00	8.33
Total – Product class 3	0.00	0.00	0.00	8.33
Total	100.00	100.00	100.00	100.00

Source: Own processing

Generally, the most common is product class 1.2 (Meet products) which is contained in each country. In Poland, the highest number of product names is registered in the class Fruits, vegetables and cereals. The Czech Republic is leader in product class Beers; Cheeses are dominant class in Slovakia and Meet products in Hungary. Poland has the most varied portfolio of certified products according to product classes; ten product classes are involved. On the other hand, only four product classes are identified in Slovakia.

In order to discover dependency between variables, we proceeded Chi-square test at significance level $\alpha = 0.05$, sig F = 0 and we can confirm, there are dependencies between variables. Pearson contingency coefficient is 0.656, and Cramer's 0.614 which means strong positive dependence.

Comparison of V4 countries according to shares of product names registered in the individual product classes is shown in Figure 4.

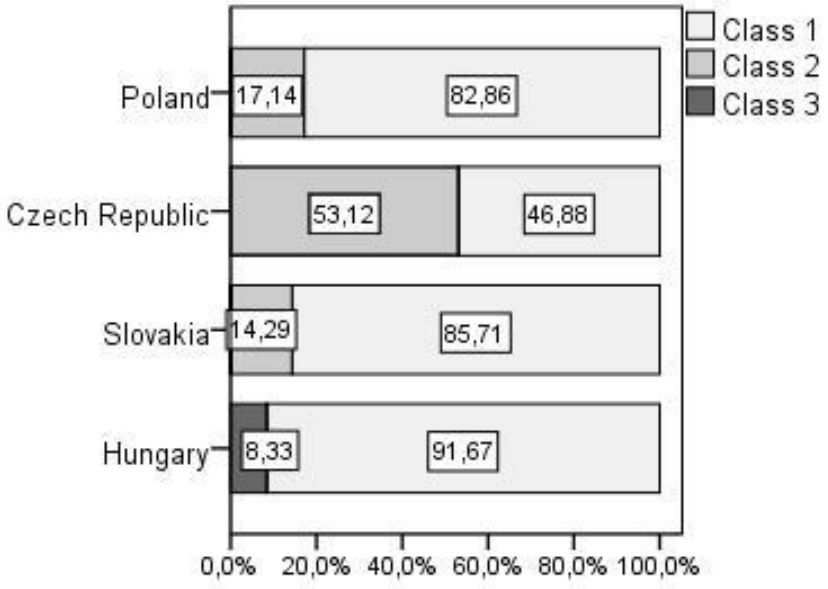

Figure 4. Comparison countries according to product classes (in per cent)

Obrázek 4. Srovnání zemí podle produktových tříd (v procentech)

Source: Own processing

All analysed countries have registered their food products only in two different classes, where the most frequent one is class 1 and least frequent is class 3. Distribution of products differs by country and for instance, the Czech Republic has quite balanced distribution of product in class 1 and class 2.

Conclusion

Original and traditional agricultural and food products can be perceived as an important part of tradition and image of the region. PDO, PGI and TSG labels, as a central component of modern consumer policy, should be an important tool for companies willing to communicate a higher quality or specific characteristics of their products linked to the geographical area. Presented paper deals with analysis of the

PDO, PGI and TSG labels utilization by Visegrad group countries. Data come from the DOOR database. The frequency of using the labels was analysed and compared according to country of origin, type of label and product class.

Analysis brought lot of findings. As results show, the share of product names registered by V4 countries as PDO, PGI and TSG in all 1146 product names registered in the DOOR database is only 8.11 %. However, there are differences depending on type of label – PDO share of V4 is only 3.57 %, PGI share is 9.67 %, and the highest share have TSGs, V4 countries hold 52.63 % of all TSGs registered in the database. In fact, 52.63 % share is reached only by Poland, Czech Republic and Slovakia, whereas Hungary does not have TSG products. For consumer policy and food marketing, a high share of TSG products, which relates to wide popularity of traditional and regional food, is significant.

Focusing on 93 items (the whole target data identified for V4) listed by V4 countries only, Poland is dominating country in number of product names registered in the DOOR database (37.63 %), followed by the Czech Republic (34.42 %). Slovakia and Hungary stay at lower level. When we consider the structure of PDO, PGI and TSG labels, most products (almost 57 %) are certified with PGI. The highest share was identified for PGI products in the Czech Republic (almost 24 % of all PDO, PGI and TSGs registered by V4 group), followed by PGIs in Poland (19 %). Other shares do not exceed 10 %.

Based on analysis of PDO, PGI and TSG shares in each country individually, we can see the differences among countries. Whereas Slovakia does not have PDOs, Hungary did not win TSGs. In the Czech Republic, almost 70 % share was revealed for PGIs.

As regard the product classes, V4 countries have certified mainly Meat products, Cheeses, and Fruits, vegetables, cereals. With respect to product classes and type of label, the most common product classes are Fruits, vegetables and cereals for PDO, Cheeses and Bread, pastry, cakes for PGI, and Meet products for TSG. Further, in each country dominate different food product classes, namely Fruits, vegetables and cereals in Poland, Beers in the Czech Republic, Cheeses in Slovakia, and Meet products in Hungary. Products from class 2 prevail in the Czech Republic, in the rest of countries products from class 1 are most often. Only Hungary has involved products belonging to class 3.

Statistic testing has confirmed weak dependence between frequency of using the PDO, PGI and TSG labels and country of origin, weak dependence between product classes and type of label, and strong dependence between country of origin and product classes in which product names were registered.

Aside from the theoretical and managerial contribution of the study, there are some limitations. Firstly, the sample size of product names from DOOR database is related to the date of 30th April 2013, but number of PDOs, PGIs and TSGs registered in the database is continuously increasing. Secondly, we proceeded Chi-square test, Pearson's and Cramer's contingency coefficients in the study. There are many other statistical methods for analysing and comparison of the labels utilization. Finally, the attention was given only to selected criteria of comparison and only to V4 countries. It is also important to keep in mind, that the countries cannot be segmented in the same way, even though there are situated in the same geographical area, Central Europe, and, for foreigners, they look very similar. Consumers in each of the V4 countries have different consumer behaviour. Things affecting consumer behaviour

on food products market are not only quality labels, but also place of buying, different economic level, national distinctions or consumer attitudes to imported products.

Following the discussed limitations of the research, we can highlight several possible future research paths. Firstly, the study could be repeated at regular periods in order to compare the expansion of PDO, PGI and TSG labels and their distribution in the countries and/or product categories. There should be also useful to conduct more extensive research using new criteria of comparison or another statistical methods. Further comparison can be introduced - as regional branding has similar objectives as EU labels, there is an opportunity to compare European Union directed activities and attitudes of non-governmental organizations. Further, since the results of the study are related only to the V4 countries, it would be interesting to carry out a study including also other groups of countries listed in DOOR database. In future research, the attention would be paid not only to food and agricultural products registered in DOOR database, but also to other categories of products covered by PDO and PGI, namely wines, aromatized wine products and spirits that are included in E-BACCHUS and E-SPIRIT-DRINKS database. Finally, it could be interesting to target the analysis at some specific markets and/or product categories.

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