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POSITION OF THE BAKERY ENTERPRISES IN THE CZECH REPUBLIC ACCORDING TO DETAILED SPECIFICATION OF THE BUSINESSES

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Abstract

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Bakery industry is one of the key sectors within the production of food products; however, there is a decrease of staff and lack of interest in studying or doing business in this branch, which is consistent with below-average wage. Very low labour productivity associated with labour intensity and a low economic performance of the industry is also characteristic. This article aims to identify whether those unfavourably evolving characteristics are common to the entire industry, or relate only to specific types of businesses and if they differ significantly among these companies. The existence of companies with similar characteristics will be verified based on cluster analysis which will define the key players on the Czech market with bakery and confectionery products. The results show that there were statistically significant differences in most of the evaluated indicators among the companies producing bakery when we classify the companies according to their size, ownership and use of grant funds. According to the cluster analysis, two key players that represent a threat for other groups of companies were identified on the market. In the risk there is mainly a group of micro and small enterprises with family ownership, whose economic position is weak, even if it represents the largest category. Therefore, more attention should be paid to this group of enterprises and focus on their development and access to finance for the development of their business.

Keywords: bakery industry, economic position, cluster analysis, performance, competitiveness, ownership, economy of business

INTRODUCTION

Food production is in the Czech Republic, as in other countries, the strategic sector of the national economy. Its character is determined by providing the population's diet which is achieved by processing domestic agricultural raw materials and also by the contribution of imports, mainly from the EU countries (MoA, 2015).

Baking industry is among the most important sectors of the European food and drink industry. There is 54% of the enterprises of the food and drink industries of the EU (the highest share) in this branch and 32% of employees work here (also the highest share). The enterprises contribute by 20% to a turnover which represents the highest percentage. With the creation of value added it is in the fourth position, i.e. 15%. Labour productivity is problematic. It is the lowest in this production field in comparison to other manufacturing sectors. Average labour productivity is 26 thousand EUR per person (Food Drink Europe, 2015).

The bakery industry is an important sector which is linked with the mill industry, pasta manufacturers and trading companies. Economy of this branch is also influenced by the price of flour which has fluctuated recently (Mejstříková *et al.*, 2011). Position of bakery and confectionery producers is also significant in the Czech food industry. The sector contributed to the total revenues from sales of own products and services of the food products industry

by 12.1 % in 2014. The biggest employer in this sector is currently a group 10.7 Manufacture of bakery and farinaceous products which is demanding in labour intensity and in different technologies and sizes of companies represented throughout the country. There were 35.3 % of employees working in this group in food production in 2014 i.e. 29,756 people, which makes it one of the most important employers. It contributes by 22 % to the creation of value added which is the second highest percentage (MoA, 2015).

A problematic area in this manufacturing industry is a long-term decline in employees which is in the context with low average gross wages per month. These wages are the lowest within the production of food products, however, there was an increase to 17,320 CZK (11 % in a year) in 2014. Another distinguishing feature of the field is low labour productivity which was 392.6 thousand CZK in 2014 and is the lowest in the food industry (MoA, 2015).

So the question is whether those unfavourably evolving characteristics are common to all types of enterprises of bakery industry, or whether it is only a specific type (e.g. businesses of different sizes, with different types of ownership, operating in various regions, etc.). This article aims to identify the economic position of the bakery industry enterprises on the Czech market divided according to selected criteria. A partial aim is to verify the existence of statistically significant differences of the influence of qualitative factors (i.e. as the size of the company, form of ownership, drawing grants or region) to economic indicators (i.e. labour productivity, revenues, production consumption and return on assets). Yet another objective is to perform cluster analysis which puts businesses into clusters according to quantitative parameters. Synthesis of these goals will identify positions of bakery industry enterprises on the Czech market with an emphasis on the aspects mentioned above and further, key players will be defined on the market of the bakery products.

MATERIALS AND METHODS

The data used in this article comes from a database of companies and institutions Albertina. This database provides individual data from financial statements (balance sheet and profit and loss statement) of businesses. The selection of companies was carried out according to the CZ-NACE businesses (i.e. the classification of economic activities). This means companies engaged in the production field 10.7, i.e. Manufacture of bakery and farinaceous products. Accounting data of these enterprises for the year 2014 was a subject to evaluation. A total of 395 bakery and confectionery enterprises were analysed.

From the database Albertina, respectively from financial statements, items as value added, production consumption, sales of own products and services, assets, EBIT and number of employees were selected. For example Meric *et al.* (2011) also uses financial indicators to evaluate the position of firms on the market, respectively their competitiveness. Following evaluation indicators were compiled:

- Labour productivity, which is calculated as a value added per one employee.
- Revenues (i.e. the item of Profit and loss statement – Sales of own products and services).
- Production consumption (i.e. items Profit and loss statement – Production Consumption)
- Return on assets (ROA), which is calculated as the ratio of profit before interest and taxes and the amount of assets. The indicator was used to evaluate the position of enterprises, respectively their competitiveness, for example, Berman *et al.* (1999).

Specification of enterprises

Enterprises of bakery industry were classified according to criteria that could affect their economic results. Size of the company, form of ownership, use of grant resources and the region were chosen, as for instance used by Latruffe (2010). Four sizes of groups were set for bakery businesses (micro, small, medium and large) according to the number of employed people. Micro enterprise employs 0–9 employees; small enterprise has 10–49 employees, medium companies are with 50–249 employees and large enterprise has more than 250 employees. Information about the number of employed people was obtained from the database of companies and institutions Albertina. There were 152 micro enterprises, 155 small companies, 66 medium and 22 large enterprises analyzed when considering this division. The reason for the inclusion of this factor is that according to the authors Bondareva a Zatrochová (2014) and Gorton and Davidova (2004), the size of the company can be related to how efficient the company is. A prerequisite is the existence of a positive relationship between the company size and economic indicators.

According to the forms of companies' ownership, the enterprises have been divided into Individually owned enterprises (the enterprises owned by one person); Family-owned enterprises (companies owned by the family, ie. people with the same surname with greater than 50% participation); Other ownership (the company is owned by persons who are not relatives) and Foreign ownership (foreign-owned companies with a shareholding of more than 50 %). Information about the ownership was processed according to the database Arachné that provides the above data. A total of 106 individually owned companies were analyzed, 157 family owned enterprises, 121 enterprises of other ownership and 11 foreign companies. This aspect has been included to verify whether the economic results of enterprises vary according to who owns the enterprise. The aim was also to identify the position of foreign enterprises,

which are the key competitors and thus can affect the position of other enterprises.

Another measure was the use of grant funds by businesses. Enterprises of bakery industry use primarily the financial resources provided by the Ministry of Industry and Trade under the Operational Programme Enterprise and Innovation (2007–2013) (OPEI) or his successor Operational Programme Enterprise and Innovation for Competitiveness (2014–2020). Businesses were divided into groups of the grant recipients (enterprises, which in 2012–2014 asked for a grant and received it); and groups of businesses that did not apply for support (they did not apply for subsidy at all) and businesses that were not supported (i.e., they requested subsidy, but were not supported). Data for the division of enterprises according to the above mentioned categories were provided by the Ministry of Industry and Trade. There were 25 companies evaluated that received subsidies, 343 enterprises that have not received any grants and 27 companies that were not supported. The assumption is that subsidies have a positive effect on the economy of enterprises, i.e., that there will be significant differences between supported and unsupported businesses.

The last aspect was dividing the enterprises by place of businesses, i.e. the region. This criterion was used, for example by Tonsor and Featherstone (2009). The aim is to verify if the bakery businesses operating in some regions exhibit more favourable economic results and if there are important differences among them. Frequencies of companies by region are shown in Tab. IV of basic descriptive characteristics.

The database Albertina provided a complete accounting data for 540 companies of manufacturing industry 10.7 Manufacture of bakery and farinaceous products in 2010–2015. Data for 2015 is not sufficient, therefore year 2014 was evaluated. Accounting data from 395 companies was obtained that year. Thus the paper analyzes 73 % of companies with available accounting data.

Statistical analysis

First, the basic descriptive characteristics like some measures of location and variability, such as mean, 95% lower and upper confidence interval of mean, median and standard deviation were calculated for the quantitative data for individual enterprises of manufacturing sector Manufacture of bakery and farinaceous products (CZ-NACE 10.7). Furthermore, the relative and absolute frequencies were calculated, i.e. frequency tables for individual economic indicators in connection with qualitative factors were created (Friedman, *et al.* 2008).

Then, statistical differences of the impact factor (the various categories of above mentioned qualitative variables) per average level of monitored economic indicators were observed using one-way analysis of variance (one-way ANOVA). Analysis of variance is a standard tool (Sauro and Lewis, 2016). The null hypothesis is that the average values of the economic indicators are the same for all observed groups classified by the same factor. An alternative hypothesis is that at least one of the monitored groups differs with its mean from other average values. Analysis of variance is based on the F-test. Output of F-test is p-value, which is compared with the significance level $\alpha = 0.05$. If $p < \alpha$, then we reject the null hypothesis (Rossi and Mirtchev, 2016). Within ANOVA there is sometimes performed so-called multiple comparison using a post hoc tests (Kucuk *et al.*, 2016), however, it is not covered in the paper.

Furthermore, cluster analysis was used, specifically hierarchical cluster analysis for tracking the similarity of companies' behaviour on the basis of monitored economic indicators as the authors (Santis *et al.*, 2016) use it. The paper uses Ward's method as a cluster method with chosen measure squared Euclidean distance. The output of cluster analysis is a graphical representation of clusters using dendrogram and a graph of schedule clustering (Szekely and Rizzo, 2005).

RESULTS AND DISCUSSION

The results are divided according to the specifics of businesses, i.e. according to ownership, size, region, and their use of grant funds. In thus structured enterprises the existence of statistically significant effects on selected economic indicators (i.e. revenues, production consumption, labour productivity and return on assets) was examined. The following tables provide basic descriptive characteristics including statistical significance of influence factor on economic indicator (p-value, ANOVA).

From Tab. I it is clear that family-owned businesses (157 businesses) and enterprises of other ownership (121 companies) dominated in the bakery industry. Business ownership is a significant factor which causes statistically significant differences among businesses in all analyzed indicators (excluding return on assets). Firms with foreign ownership reported provably more favourable values. They have the highest productivity of labour and have the highest revenues. Enterprises that are owned by one person face the economic problems. They have the lowest revenues, the highest negative return on assets and very low labour productivity. A similar situation is also evident in family businesses, which are also struggling with low labour productivity and low revenues. Bakery production of small businesses often relates to the focus of enterprises, i.e. highly specialized production that is demanding for handwork and quality. According to Hadley (2006) technological innovation may not be required by these enterprises due to the characteristics of production. Therefore, there can be significant differences among enterprises. Foreign-owned enterprises focus on mass production and their goal is to maximize profits by using automated processes.

I: *Descriptive statistics and one-way ANOVA for factor "Ownership", year 2014*

Economic indicator	Ownership	N	Mean	95 % Lower Confidence Interval for Mean	95 % Upper Confidence Interval for Mean	Median	Std. Deviation	P-value ANOVA
Labour productivity	Individual	106	172.87	125.36	220.38	153.09	246.68	0.000374*
	Other	121	220.32	181.47	259.17	216.13	215.85	
	Family	157	184.02	159.93	208.10	189.44	152.29	
	Foreign	11	486.18	238.56	733.80	319.51	346.15	
Revenues	Individual	106	19,404.72	8,329.65	30,479.79	3,178.00	57,506.51	<0.0001*
	Other	121	80,868.94	29,556.17	132,181.71	12,180	285,080.95	
	Family	157	23,648.86	16,445.16	30,852.57	8,880.50	45,547.66	
	Foreign	11	649,119.05	–41,250.32	1,339,488.42	177,405.00	965,069.83	
Production consumption	Individual	106	13,535.58	6,389.41	20,681.76	2,768.00	37,106.01	<0.0001*
	Other	121	53,901.30	17,753.04	90,049.55	7,700.00	200,830.69	
	Family	157	16,009.39	10,780.20	21,238.59	5,357.00	33,063.18	
	Foreign	11	508,119.41	–36,154.94	1,052,393.74	124,565.50	760,843.07	
ROA	Individual	106	–1.03	–2.74	0.68	0.00	8.88	0.288045
	Other	121	0.06	–0.06	0.19	0.03	0.72	
	Family	157	–0.07	–0.13	–0.01	0.02	0.38	
	Foreign	11	–0.01	–0.06	0.05	0.00	0.08	

Note: * Statistically significance of influence of business ownership on economic indicators (testing on level of significance α = 0.05). All indicators are in thousands CZK, ROA in CZK.

According to the results, a form of ownership can be regarded as a factor that significantly affects the economy of enterprises. Crucial are the foreign-owned enterprises, which may represent a threat and a strong competition for other businesses because of its performance, especially in terms of pricing policy. Their obtained results are demonstrably better than results of other groups of companies. The unfavourable economic situation was demonstrated in family businesses and businesses owned by one person.

When considering the size breakdown of enterprises to micro, small, medium and large enterprises, the largest analyzed group are the micro and small enterprises (Tab. II). Therefore, the domains of bakery industry are the small entrepreneurs with 307 businesses. A statistically significant difference was found in indicators of labour productivity, revenues and production consumption. Significant differences in the reported return on assets were not shown. Large companies that achieve the highest labour productivity and the highest revenues, which are in context with production consumption, can be considered to be the top performers. According to the results, it was confirmed that with the growing size, the business performance also increases. Similarly, this was shown, for example by authors Emvalomatis *et al.* (2008) or Latruffe *et al.* (2004). The smaller size groups of enterprises, experience the negative profitability i.e. the micro and small enterprises. Medium and large companies have positive average return on assets. The position of micro enterprises, i.e. enterprises up to 9 employees, is in comparison with other size groups relatively unfavourable. These businesses have very low labour productivity, low revenues and their profitability is negative.

It was proved that enterprises divided by size categories are significantly different. Better performance was reported for large enterprises, while unfavourable for micro and small enterprises. However, this size category is the most important part of bakery industry; therefore, attention should be paid to their market position. Their position may just be disadvantaged as a result of large enterprises.

Only 25 companies out of 395 analyzed bakery businesses received support from the program OPEI, 27 companies were not supported. A total of 343 businesses did not ask for investment support (Tab. III). Statistically significant differences in economic indicators were shown in relation to whether the firm used the grant resources or not (in all evaluated indicators beyond return on assets). Significantly lower performance was found in firms that did not apply for support. According to the results it can be stated that subsidies contribute to a greater efficiency of enterprises. These businesses have higher revenues. However, their labour productivity was exceeded by businesses that did not receive support. The positive impact of drawn subsidies (which have an investment character in case of the food business) has been confirmed for example by authors Skuras *et al.* (2006), while a negative impact by Harris and Trainor (2005). Enterprises of bakery industry requested support mostly within the OPEI 2007–2013 under the Programme *Development* that allowed companies to buy production lines

II: *Descriptive statistics and one-way ANOVA for factor "Size", year 2014*

Economic indicator	Size	N	Mean	95% Lower Confidence Interval for Mean	95% Upper Confidence Interval for Mean	Median	Std. Deviation	P-value ANOVA
Labour productivity	Micro	152	94.62	60.09	129.15	0.00	214.75	<0.0001*
	Small	155	241.39	217.89	264.88	229.01	147.56	
	Medium	66	301.64	243.89	359.4	236.09	234.94	
	Large	22	326.40	238.29	414.51	283.30	198.73	
Revenues	Micro	152	5,877.83	1,231.87	10,523.80	486.00	28,893.37	<0.0001*
	Small	155	15,657.84	12,958.31	18,357.36	10,108.00	16,957.08	
	Medium	66	84,318.84	62,187.65	106,450.03	55,652.50	90 026.16	
	Large	22	598,116.02	225,185.75	971,046.30	220,643.00	841,116.75	
Production consumption	Micro	152	4,537.37	934.72	8,140.02	740.50	22,404.96	<0.0001*
	Small	155	11,024.14	8,868.30	13,179.98	7,101.00	13,541.90	
	Medium	66	56,159.92	41,504.00	70,815.85	37,976.50	59,617.95	
	Large	22	429,366.95	143,390.20	715,343.70	154,042.50	644,999.48	
ROA	Micro	152	–0.69	–1.89	0.51	0.00	7.47	0.600676
	Small	155	–0.08	–0.14	–0.02	0.02	0.39	
	Medium	66	0.04	0.02	0.07	0.04	0.10	
	Large	22	0.03	0.00	0.06	0.02	0.07	

Note: * Statistically significance of influence of company size on economic indicators (testing on level of significance α = 0.05). All indicators are in thousands CZK, ROA in CZK.

III: *Descriptive statistics and one-way ANOVA for factor "Subsidies", year 2014*

Economic indicator	Subsidies	N	Mean	95% Lower Confidence Interval for Mean	95% Upper Confidence Interval for Mean	Median	Std. Deviation	P-value ANOVA
Labour productivity	Supported	25	362.54	293.11	431.97	313.31	168.20	<0.0001*
	Not drawing	27	379.76	256.98	502.54	310.34	310.37	
	Not supported	343	173.71	153.13	194.28	166.33	193.17	
Revenues	Supported	25	214,746.78	–15,663.02	445,156.58	60,141.00	558,190.70	0.000128*
	Not drawing	27	153,215.72	34,703.84	271,727.60	43,302.00	299,585.00	
	Not supported	343	36,706.63	16,797.49	56,615.77	6,156.00	186,910.17	
Production consumption	Supported	25	154,789.16	–17,048.37	326,626.69	46,247.00	416,293.54	0.000264*
	Not drawing	27	107,738.65	14,564.56	200,912.74	35,503.00	235,533.86	
	Not supported	343	25,679.81	10,819.13	40,540.49	4,269.00	139,514.41	
ROA	Supported	25	0.03	0.02	0.05	0.04	0.04	0.864512
	Not drawing	27	0.04	0.01	0.08	0.04	0.09	
	Not supported	343	–0.34	–0.87	0.2	0.01	4.98	

Note: * Statistical significance of influence of subsidies on economic indicators (testing on level of significance α = 0.05). All indicators are in thousands CZK, ROA in CZK.

for ordinary pastry, other new technologies or modernization of production.

The last criterion was the region, or whether the economic results are different according to where the business is located. Most of the bakery enterprises are located in Jihomoravský region (58 companies) and in Praha (54 companies). Conversely, the fewest businesses are located in Karlovarský region (13 companies) and Liberecký region (13 companies).

The average results of indicators in individual regions can be compared in the following Tab. IV. The highest labour productivity has been demonstrated in Jihočeský and Moravskoslezský region, the lowest in Ústecký and Jihomoravský region. Bakeries in Praha and Olomoucký region contribute the most to the total revenues of bakery industry, on the contrary, the least in Zlínský and Ústecký region.

There were found no statistically significant differences in the evaluated indicators in this dataset. The place where the company operates does not significantly affect the economy of enterprises.

Cluster analysis

The aim of cluster analysis was to determine whether there are groups of companies on the market of bakery industry, which according to the above criteria (size, ownership, use of grants and region) and economic indicators show a similar behaviour. The key positions of these groups of companies in the market will be identified by the synthesis with the previous results, i.e. testing statistically significant differences and a comparison of the reported values within the classified businesses. In total, four clusters were included. Dendrogram, which shows the individual clusters, is not mentioned in the article due to the extensiveness. More detailed results of this analysis are available upon request by the authors of the article.

The first formed cluster represents the three companies, which are large size and foreign-owned. Important position of this group on the market is shown from the previous analysis of companies according to the specific aspect (large and foreign-owned companies showed the best economic results). However, these are not typical producers of bakery products. These companies are important representatives of pasta, crackers and biscuits or sweet pastry and cakes producers (prebaked, to finish cooking or defrosting). This group does not represent a direct competitor to traditional manufacturers of bakery products. These three companies contribute to total revenues of analyzed enterprises by 17%.

The second cluster consists of two large-size companies. One foreign-owned and the other is a subsidiary of the Czech group with a wide portfolio. Both companies deal mainly with ordinary pastry. Therefore, they are the key players on the market that can significantly influence the situation on the market of bakery products. These enterprises contribute by 26% to total revenues of evaluated enterprises in bakery industry. These first two clusters consisting of five companies contribute to total revenues by nearly 44%.

The third cluster is made up of 22 companies. All of them are medium or large size. In terms of ownership, group with other form of ownership (11 companies) dominates. The use of grant resources, as well as regional affiliation is very diverse. The position of the cluster on the market can be considered very good given that these are larger sized enterprises, that have demonstrated more favourable economic results, as well as businesses owned by other persons without family relationship. This cluster may be able to compete with the above-identified key players.

The last cluster consists of 368 enterprises, 306 of them are micro and small size of the individual or family ownership. These categories of companies show less favourable economic outcomes and their position on the market may be threatened by companies belonging to previous clusters according to previous analyzes. Threat may lie in the realization of their products on the market. Small family companies do traditional craft, respectively traditional production; it may result as an inadequate appreciation of the market in the context of the influence of big manufacturers, which pushes down the prices of bakery products. So it is important to use the strategic position of micro and small enterprises and focus on local markets, local consumers or to specialize their production closely.

IV: *Descriptive statistics and one-way ANOVA for factor "Region", year 2014*

Economic indicator	Region	N	Mean	95% Lower Confidence Interval for Mean	95% Upper Confidence Interval for Mean	Median	Std. Deviation	P-value ANOVA
Labour productivity	Jihočeský	24	254.00	164.52	343.47	223.30	211.90	0.422297
	Jihomoravský	58	164.02	126.69	201.36	166.43	140.70	
	Karlovarský	13	180.63	98.22	263.03	198.29	136.37	
	Královehradecký	27	178.94	122.33	235.55	158.77	143.11	
	Liberecký	13	243.31	182.94	303.68	275.07	99.90	
	Moravskoslezský	40	279.00	209.93	348.07	248.77	215.97	
	Olomoucký	15	230.32	48.68	411.95	141.96	327.98	
	Pardubický	14	178.56	101.79	255.32	200.51	132.96	
	Plzeňský	32	175.97	121.29	230.65	158.33	151.67	
	Praha	54	170.33	94.94	245.73	136.01	276.23	
	Středočeský	43	234.72	133.23	336.21	212.16	325.69	
	Ústecký	18	161.97	87.64	236.31	176.47	149.47	
	Vysočina	19	166.13	92.60	239.65	148.00	152.54	
	Zlínský	25	195.58	133.47	257.69	208.61	150.47	

Economic indicator	Region	N	Mean	95 % Lower Confidence Interval for Mean	95 % Upper Confidence Interval for Mean	Median	Std. Deviation	P-value ANOVA
Revenues	Jihočeský	24	72,937.77	–28,366.77	174,242.31	8,916.75	239,908.66	0.95925
	Jihomoravský	58	69,497.42	–29,653.16	168,648	3,205.5	373,679.72	
	Karlovarský	13	50,486.19	–24,509.20	125,481.58	7,419	124,104.15	
	Královehradecký	27	37,891.35	10,598.68	65,184.02	7,060.5	68,992.87	
	Liberecký	13	36,119.62	2,341.00	69,898.23	10,581.00	55,897.65	
	Moravskoslezský	40	39,388.74	18,021.47	60,756	16,729.00	66,811.21	
	Olomoucký	15	86,757.93	6,851.78	166,664.08	18,913.00	144,291.82	
	Pardubický	14	32,794.36	–1,147.96	66,736.68	12,225.50	58,786.51	
	Plzeňský	32	23,936.47	3,553.73	44,319.21	6,991.50	56,534.16	
	Praha	54	110,888.26	–6,782.28	228,558.80	3,422.75	431,110.58	
	Středočeský	43	62,248.63	–12,333.45	136,830.71	6,172.00	239,335.14	
	Ústecký	18	21,821.72	3,108.1	40,535.35	5,063.00	37,631.34	
	Vysočina	19	31,550.92	8,631.26	54,470.58	11,241.00	47,552.68	
	Zlínský	25	18,599.22	10,280.82	26,917.62	13,188.00	20,152.14	
Production consumption	Jihočeský	24	57,399.44	–29,646.09	144,444.96	6,617.50	206,140.56	0.973393
	Jihomoravský	58	51,250.64	–22,747.76	125,249.04	3,092.00	278,885.95	
	Karlovarský	13	34,023.27	–18,793.51	86,840.05	5,009.00	87,402.46	
	Královehradecký	27	28,805.35	8,248.98	49,361.72	4,361.00	51,964.24	
	Liberecký	13	24,614.00	–1,629.42	50,857.42	5,208.00	43,428.24	
	Moravskoslezský	40	23,806.35	11,884.08	35,728.62	10,326.50	37,278.59	
	Olomoucký	15	58,665.57	4,735.28	112,595.85	12,590.00	97,385.48	
	Pardubický	14	20,732.25	2,329.28	39,135.22	7,353.50	31,873.08	
	Plzeňský	32	17,380.44	2,714.85	32,046.02	5,277.50	40,676.90	
	Praha	54	75,451.43	–10,777.09	161,679.94	4,439.50	315,916.18	
	Středočeský	43	47,576.62	–11,662.35	106,815.59	5,355.75	190,098.85	
	Ústecký	18	14,076.22	921.74	27,230.71	3,481.50	26,452.43	
	Vysočina	19	21,274.87	5,618.08	36,931.66	7,617.00	32,484.01	
	Zlínský	25	11,509.36	6,394.87	16,623.85	8,227.00	12,390.37	
ROA	Jihočeský	24	–0.05	–0.14	0.03	0.00	0.21	0.952707
	Jihomoravský	58	–1.64	–4.83	1.56	0.00	12.06	
	Karlovarský	13	–0.05	–0.16	0.06	0.00	0.18	
	Královehradecký	27	–0.21	–0.46	0.04	0.01	0.64	
	Liberecký	13	–0.1	–0.35	0.14	0.00	0.4	
	Moravskoslezský	40	0.04	–0.03	0.12	0.05	0.24	
	Olomoucký	15	–0.09	–0.36	0.17	0.04	0.48	
	Pardubický	14	–0.04	–0.11	0.04	0.02	0.13	
	Plzeňský	32	–0.16	–0.33	0.01	–0.03	0.46	
	Praha	54	0.02	–0.27	0.31	0.01	1.08	
	Středočeský	43	–0.25	–0.63	0.14	0.01	1.22	
	Ústecký	18	–0.01	–0.13	0.10	0.00	0.23	
	Vysočina	19	–0.04	–0.11	0.04	0.02	0.16	
	Zlínský	25	0.21	–0.19	0.62	0.05	0.98	

Note: * Statistical significance of influence of region on economic indicators (testing on level of significance $\alpha = 0.05$). All indicators are in thousands CZK, ROA in CZK.

CONCLUSION

The aim of the article was to identify the economic position of the bakery industry on the Czech market and to determine whether unfavourably evolving characteristics; to which is this sector facing, are different in specific types of businesses. According to the testing of statistically significant differences in companies in economic indicators, it was found that these indicators differ significantly when considering the classification of enterprises according to their size, according to the forms of ownership and according to the use of grant resources. The difference of results has not been proven from the classification of holdings according to the region. Economy is problematic especially for micro and small enterprises, enterprises of individuals and family ownership and businesses which were not supported by subsidies.

According to cluster analysis, an uneven division of the market was identified. Four clusters of companies were included. The first cluster is a group of three producers of pasta, crackers and biscuits, so due to uncharacteristic baker's range of products, they cannot be considered as direct competitors of classic manufacturers of bakery products. However, two companies engaged principally in the production of bakery products, have excellent economic results, contribute significantly to the sales and have a key position on the market. They can pose a threat for other businesses. Therefore, it is desirable to pay attention to the group that has been identified as the most vulnerable, i.e. the micro and small enterprises as a family or individually owned. These categories of enterprises represent the core group in terms of number of companies and represent the potential for maintaining the tradition of baking and crafts in the Czech Republic and grace to this field despite the prolonged unfavourable economic situation in the industry. Therefore, it is necessary to encourage the development of small bakery businesses to improve their economies and position in the market, for example in the context of the use of grant funds.

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