SITUATION IN THE MARKET OF BAKERY PRODUCTS

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Abstract

Behaviour and requirements of customers have changed over the years, and therefore it is necessary to clarify what is important for customers when they purchase bread, pastries and other bakery products. Consumers currently have high requirements on the quality of marketed food, range of products, and try to eat healthier. The aim of the paper is to point out the bakery industry in Slovakia. This paper also deals with the production of bakery products, the quantities consumed and the prices of these products. Secondary data from the database of Statistical Office of the Slovak Republic were used in the processing of the issue. The primary source of information were results of a questionnaire survey aimed at finding out consumers’ behaviour in the Slovak food market with bakery products. Based on the results, it can be stated that most commonly purchased bakery products among Slovak consumers are bread and regular pastries, which are most often purchased several times a week. The results of the survey also show that the price of bakery products is important for Slovak consumers, but the majority of them decide on the basis of past experience with the manufacturer. The questionnaire survey was also concentrated on the new concept of the bakery with the sitting, and based on the results, we can state that more than 50% of consumers would welcome this option. According to the findings it is possible to assume that the bakery industry has a potential in Slovakia and has become a perspective field in the Slovak food market.

Keywords: bakery industry, bakery products, consumer, consumer behaviour, market

JEL Classification: Q 13, M3, M 31,
1 Introduction

Nowadays, bread, pastry and other bakery products are a part of the daily diet of most people. The importance of bakery products in human nutrition is significant, because these products are the basis of the food pyramid and have a high nutritional value (Nagyová et. al., 2014, Sherwood, 2013, Al-Mussali & Al-Gahri, 2009). In the context of the mentioned, the bakery industry has the potential and offers the opportunity for small and medium-sized enterprises in the field of bakery (Khana, 2014, Kiumarsi, Jayaraman, Isa, & Varastegani, 2014). There is a gradual decline in the consumption of bakery products, which could be caused by substitution of bread for other types of food products. For this reason, the aim of this paper is to point out this negative trend and the factors that determine the consumption of bakery products.

1.1 Market of bakery products in the Slovak Republic

The production of bakery products is not stable, because it changes and adapts to the requirements and needs of consumers, and it is sometimes problematic to estimate and assume their consumer behaviour (Eglite & Kunkulberga, 2017).

In the Slovak Republic, the bakery industry is one of the largest food sectors in terms of both the number of establishments and the number of employees. Nowadays there are about 7,000 employees in more than 500 plants in Slovakia. Of the total number of plants, there are 20 industrial and large-capacity plants, which are equipped with tunnel furnaces and continuous lines. There are approximately 40 medium sized bakeries with more than three furnaces, and others include small, craft bakeries with one or two furnaces and up to 50 workers. We estimate that industrial bakeries produce about 40% of total bakery production, 15% of the bakery products are produced in the trade chains (in store bakery and baking frozen products) and the remainder of bakery products are produced by small and medium-sized bakeries. The bakery industry is involved by 7% of total revenues and production of the food industry. (Ministerstvo poľnohospodárstva a rozvoja vidieka Slovenskej republiky [MPRV SR], 2014).

In recent years, the production of bakery products has been influenced by the widespread technology of pre-baking and freezing of bakery products. This technology enables foreign suppliers to enter our market, which has been protected by the short durability of fresh products. In the context of the mentioned, the production of bakery products has declined and nowadays the production of fresh bread is more than 87 thousand tonnes, and in the case of fresh pastry it is only 49 548 tonnes per year. Based on the data from Štatistický úrad Slovenskej republiky [ŠÚ SR] (2017) we point out the possible development of the production of
bakery products with a prediction for the next two years. According to the determination index (R²), it can be estimated that with 32.66% reliability, the production of bakery products will decline and will reach approximately 41 thousand tonnes in the years 2017-2018 in the Slovak Republic.

Figure 1 Production of bakery products in the Slovak Republic (in tonnes)

Source: Own processing according to ŠÚSR, 2017, own calculations.

The production of bakery products is primarily dependent on consumption, which is gradually decreasing. Based on the data from ŠÚ SR (2017), we can claim that the consumption of bread decreased by 18.7% in the period from 2008 to 2016 and nowadays it stands at 34.3 kg per capita of the Slovak Republic. We also examined the consumption of wheat bread, which ranged from 29 to 30 kg per person in the observed period. Based on the above, we can state that the popularity of bread consumption has been decreasing in the recent years. In the context of this information, we point out the possible development of bread consumption with a prediction for the next two years. According to the determination index (R²), it can be estimated that with 95.31% reliability, the consumption of bread will decline and will reach approximately 33 kg per capita and year in the years 2017-2018 in the Slovak Republic. Consumption of bread is lower by 21 kilograms in the comparison with the nutritional aspect and the recommended bread consumption (Pachingerová, 2009). This fact may be caused by changes in the preferences of Slovaks in their efforts to eat rationally and healthily. In the context of the consumption of bakery products, it is important to focus on the different consumption of bread per capita in the countries of the European Union. According to the Association Internationale de la Boulangerie Industrielle [AIBI] (2015) the highest bread consumption per person and year is recorded in Turkey and Bulgaria (approximately 100 kg) and the lowest in the United Kingdom (approximately 32 kg).
In connection with the above, it is important to analyse consumer preferences and factors that affect the consumption of bakery products in order to increase the consumption of bread.

1.2 Consumer behaviour in the market of bakery products

In general, consumer behaviour can be defined as the behaviour that occurs in the search, purchase, use and disposal of products and services which meet the needs of consumers (Horská et al., 2009, Schiffmann & Kanuk, 2004, Richterová, Kulčáková, Klepochové, & Kopaničová, 2010). The choice of food is influenced by several factors and criteria that the consumer considers as important in the process of purchasing, such as the perception of food safety (Adam, Hiamey & Afenyo, 2014), quality perception (Stávková, Stejskal & Toufarová, 2008, Wingert, Zachary, Fox, Gittelsohn, & Surkan, 2014), food prices (Kubicová, Kádeková, Nagyová & Stávková, 2014, Kubicová, Nagyová, & Kádeková, 2013), food origin (Kleinnová & Lušňáková, 2011). In the context of bakery products, Khanna (2014) has defined freshness, price and quality as three key factors that are crucial to the purchase and consumption of this type of food.

The first factor that greatly affects the consumption of bakery products is consumer prices (Nagyová, Stávková, & Kádeková, 2013). In the Slovak Republic, prices of fresh bread are constant at the level of 0.06 Eur per 40 grams, what is mainly caused by the pressure of trade chains (Únia priemyselných pekárov, 2015). Regarding the prices of bread, the development was fluctuating. In the first year of the observed period, the price of a kilogram of bread was 1.03 Eur. In 2015 the price was rising to 1.34 Eur and nowadays the price is at the level of 1.22 Eur (ŠÚ SR, 2017). Based on the data from ŠÚ SR (2017) we point out the possible development of price of bread with a prediction for the next two years. According to the determination index (R2), it can be estimated that with 36.67 % reliability,
the consumer price of bread will increase and will reach approximately 1.38 Eur per kg of bread in the years 2017-2018 in the Slovak Republic.

**Figure 3 Consumer prices of bakery products in Eur**

\[
\begin{align*}
\text{Price} &= 0.0156x + 1.1387 \\
R^2 &= 0.3657
\end{align*}
\]

Source: Own processing according to ŠÚSR, 2017, own calculations.

Another factor that influences consumer decisions on the purchase of bakery products is the perception of their quality by consumers. The quality of bakery products, which is perceived by consumers, is determined by the sensory and health aspects (Stávková & Turčínková, 2005, Skořepa & Pícha, 2016, Nagyová, Horská & Kádeková, 2011). Bread and other bakery products are considered as healthy foods due to the content of carbohydrate, fiber, protein and fat (Kearney, 2010). Consumption of bakery products is also related to tradition in the most of European countries, so it is necessary to point out their importance in culinary culture. Moreover, traditional bakery products are considered the most delicious. For this reason, tradition and authenticity have a significant place in the bakery industry (Low Energy Ovens, 2012). Nagyová, Rovný, Stávková, Uličná and Maďarová (2009) emphasize that consumers prefer the quality aspect and external subjective factors such as the shape, appearance, colour, or flavour of pastries and bread in the process of buying bakery products.

The last significant factor that affects the purchase and consumption of bakery products is their freshness. Freshness also relates to the health aspect of bakery products, which means that fresh bread and pastries do not contain saturated fats and artificial ingredients, which are often used to extend durability. Based on the mentioned, it is possible to state that fresh bakery products have positive aspects for human health, which may be the reason for buying this type of bakery products (European Bakery & Cafe, 2014).

The place of purchase also initiates consumers to buy and consume bakery products. Bakery products are available in hypermarkets, supermarkets, bakeries, local stores, or in specialized grocery stores. In the world, the sale of bakery products is realised in various alternative forms, such as the sale of pastries in
fast food, the sale of pastries in cafes and so on (Fremaux, 2014). In the Slovak Republic, these types of sales are not expanded, so we think that the increase in bread and bread consumption could be realized by the concept of bakery with seating for coffee, tea or other beverages. Consumers could enjoy the freshness of the bakery products and observe the process of their production.

2 Data and Methods

The aim of the paper is to focus on the purchase of bakery products in the Slovak Republic. In connection with its fulfilment, methods of collecting and obtaining information and methods of information processing were used.

Within the scope of data collecting methods we used secondary and primary data. Secondary data represent information from domestic and foreign literature and web pages focused on processed issues. Primary data were obtained from the results of the questionnaire survey on a random sample of 240 respondents in December 2017 and January 2018. Respondents were divided into 6 categories by gender, age, education, residence, economic status and monthly income. The classification is shown in Table 1.

Table 1 The segmentation of respondents from the aspect of selected criteria

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>%</th>
<th>Education</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>118</td>
<td>49,17</td>
<td>Elementary</td>
<td>22</td>
<td>9,17</td>
</tr>
<tr>
<td>Women</td>
<td>122</td>
<td>50,83</td>
<td>Secondary without maturity</td>
<td>53</td>
<td>24,09</td>
</tr>
<tr>
<td>Age</td>
<td>n</td>
<td>%</td>
<td>Secondary with maturity</td>
<td>103</td>
<td>42,92</td>
</tr>
<tr>
<td>Less than 24 years</td>
<td>76</td>
<td>31,67</td>
<td>University</td>
<td>62</td>
<td>25,83</td>
</tr>
<tr>
<td>25 – 40 years</td>
<td>53</td>
<td>22,08</td>
<td>Residence</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>41 – 54 years</td>
<td>63</td>
<td>26,25</td>
<td>City</td>
<td>127</td>
<td>52,92</td>
</tr>
<tr>
<td>More than 55 years</td>
<td>48</td>
<td>20,00</td>
<td>Village</td>
<td>113</td>
<td>47,08</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Working status</th>
<th>n</th>
<th>%</th>
<th>Monthly income</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>48</td>
<td>20,00</td>
<td>Nothing</td>
<td>53</td>
<td>22,08</td>
</tr>
<tr>
<td>Employed</td>
<td>137</td>
<td>57,08</td>
<td>Less than 500 eur</td>
<td>50</td>
<td>20,83</td>
</tr>
<tr>
<td>Unemployed</td>
<td>12</td>
<td>5,00</td>
<td>501 – 1000 eur</td>
<td>130</td>
<td>54,17</td>
</tr>
<tr>
<td>Retired</td>
<td>7</td>
<td>2,92</td>
<td>More than 1001 eur</td>
<td>7</td>
<td>2,92</td>
</tr>
<tr>
<td>Maternity leave</td>
<td>17</td>
<td>7,08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-employed</td>
<td>19</td>
<td>7,92</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Obtained data were processed and analysed in Excel. Furthermore, for hypothesis testing, following statistical tests were applied:

- Chi-Square Test of Independence
- Cramer ´V coefficient
- Test of hypothesis for a proportion

In relation to the objective and methods, the following hypotheses were formulated:

- Hypothesis 1: We assume that there is a dependence between the most frequently purchased bakery products and the respondents' gender.
- Hypothesis 2: We assume that more than 20 % of respondents buy bakery products daily.
- Hypothesis 3: We assume that there is a dependence between the place of purchase and the residence of the respondents.
- Hypothesis 4: We assume that for more than 40 % of respondents, the price is an important criterion for choosing bakery products.
- Hypothesis 5: We assume that more than 30% of respondents would welcome the new concept of a bakery with seating.

### 3 Results and Discussion

The aim of the questionnaire survey was to find out, which bakery products are most commonly bought by consumers. Based on the results, we can state that 45% of respondents mostly buy regular pastries, including rolls, buns, salty scones, baguettes and so on. 42.92% prefer bread as the most commonly bought bakery product. 7.92% of respondents mostly buy fine bakery products, including different cakes, croissants, gingerbread and 4.17% of the respondents prefer to buy other bakeries, such as bread crumbs, biscuits, maces, sticks, etc. Skořepa and Picha (2016) conclude that consumers mostly buy bread within the bakery products.
In the context of this question, we found the dependence between the most commonly bought bakery products and gender of respondents and following hypothesis was examined and formulated:

H0: It is assumed that there is no dependence between the most frequently purchased bakery products and the respondent’s gender.

H1: It is assumed that there is a dependence between the most frequently purchased bakery products and the respondent’s gender.

Based on the results of Chi-Square Test of Independence we can conclude, that the calculated value of Chi (3.268) is lower than the table value of Chi (7.815), therefore the null hypothesis was accepted, what means that gender does not have a statistically significant impact on the most frequently purchased bakery products.

The consumer survey was also focused on the frequency of buying bakery products. Most respondents, representing 49.58%, buy bakery products several times a week. 26.05% of respondents prefer fresh bakery products every day. 14.29% buy bakery products approximately once a week, and the other 10.08% of consumers claim that they buy bakery products less than once a week. Rajput, Kesharwani and Khanna (2012) also surveyed the frequency of purchases of bakery products by consumers and concluded that 34% of all respondents buy bakery products every day.
In the context of the question, the following hypothesis was formulated and statistical test of hypothesis for a proportion was applied:

H0: It is assumed that 20% of respondents buy bakery products daily.
H1: It is assumed that more than 20% of respondents buy bakery products daily.

Results showed that p-value (0.2583) is not in confidence interval <0, 0.24247>, therefore the null hypothesis was rejected and it can be concluded that more than 20% of respondents buy bakery products every day.

The questionnaire for Slovak consumers was also focused on the question of the place of purchase of bakery products. Based on the results of the questionnaire survey, we can state that the most popular place to buy bakery products are supermarkets, which are used by 37.08% of respondents. 27.92% prefer to buy bread and other bakery products in bakeries. 20.83% of respondents mostly buy bakery products at small local stores and 14.17% of respondents prefer hypermarkets.
H0: It is assumed that there is no dependence between the place of purchase and the residence of the respondents.

H1: It is assumed that there is a dependence between the place of purchase and the residence of the respondents.

Based on the results of Chi-Square Test of Independence we can conclude, that the calculated value of Chi (4.4499) is lower than the table value of Chi (7.815), therefore the null hypothesis was accepted, and it means that the residence of consumers has not statistically significant impact on the place of purchase of bakery foods.

In the questionnaire survey we were interested in what factors influence consumers in the process of buying bakery products. 77.5% of all respondents purchase a bakery product based on their past experience. 34.17% of consumers buy bakery products based on recommendations. The manufacturer's brand is an important criterion for the purchase of bakery products for 18.33% of consumers. Advertising is important for approximately 11.67% of respondents and packaging influences 8.33% of respondents. 5.83% of consumers claimed that they were influenced by other factors, especially the appearance of the product, its price and taste.

Figure 7 Factors influencing consumers in the process of buying bakery products


The aim of the questionnaire survey was to determine whether the price is an important factor in the process of buying bakery products. Based on the results, the price of these products is important to 50.83%. 34.17% of consumers claimed that the price of bakery products is less important to them. On the other hand, the price is a very important criterion to 12.08% of respondents. 2.92% of respondents consider the price of bakery products as an unimportant criterion, so we suppose they are more interested in the quality of the products. Eglite and Kunkulbergen (2017) concluded that the price is a decisive factor in the purchase of bakery products with emphasis on bread.
Figure 8 The importance of the price of bakery products


In the context of the question, the following hypothesis was formulated and statistical test of hypothesis for a proportion was applied:

H0: It is assumed that to 40 % of respondents, the price is an important criterion for choosing of bakery products.

H1: It is assumed that to more than 40 % of respondents, the price is an important criterion for choosing of bakery products.

Results showed that p – value (0.50833) is not in confidence interval <0, 0.45202>, therefore the null hypothesis was rejected and it can be concluded that the price is an important criterion for choosing of bakery products to more than 40 % of respondents.

Within the consumer research, we were interested in how Slovak consumers perceive the quality of bakery products sold in the Slovak market. Based on the results of the survey, we can conclude that 52.08% of consumers consider the quality of these products as good. 32.92% of respondents are satisfied with the quality of the products and perceive it as very good. 12.92% of respondents consider the quality of domestic bakery products as adequate. 2.08% of respondents evaluate the quality of these products as bad. Vilhanova (2010) emphasizes the quality of domestic products in comparison to foreign bakery products. Based on the results she concluded that 51% of respondents think that domestic and foreign products are the same, 20% of respondents consider domestic food as better than foreign bakery products and 8% think domestic foods are less good than foreign ones.
In the last question of the survey, we asked if the respondents would welcome a bakery that would offer them an option of sitting and snacking. 54.17% of respondents welcome this option and would like to visit this bakery. This type of bakeries is not widespread in the Slovak Republic, so 30% of the respondents do not know, whether they would welcome this concept of bakeries. A negative response was identified by 15.83% of Slovak consumers.

In the context of the question, the following hypothesis was formulated and statistical test of hypothesis for a proportion was applied:

H0: It is assumed that 30% of respondents would welcome the new concept of a bakery with seating.

H1: It is assumed that more than 30% of respondents would welcome the new concept of a bakery with seating.

Results showed that p – value (0.541667) is not in confidence interval <0, 0.348655>, therefore the null hypothesis was rejected and it can be concluded that more than 30% of respondents would welcome the new concept of a bakery with seating.
4 Conclusion

The bakery industry has recently become a topic of discussion on the Slovak food market. The objective of the paper was to point out the indispensability of the bakery industry among the food sector. Bakery products are expected to be produced at a lower level during the following years. The reason behind is the technology of pre-baking and freezing of bakery products. On the other hand, it is important to emphasize that the consumption of pastries is constant and these products are widespread among consumers. This is confirmed by the results of the questionnaire survey, which showed that consumers buy bakery products more than once a week, they prefer supermarkets and decide based on previous product experience. Slovak consumers consider the quality of domestic products as good, but the price of bakery products is still important to them. The survey showed that the consumption of bakery products could be increased by more interactive sales of bakery products. For this reason, we propose to create new concepts of bakeries with sitting for coffee, tea or other beverages in the Slovak Republic. The consumer would be able to comfortably enjoy fresh pastries while watching individual parts of the process of producing bakery products. This may be the reason for the repeated purchase and consumption of pastries.

References


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