EMPIRICAL STUDY ON FOOD CONSUMPTION IN WESTERN-TRANSDANUBIAN REGION – CHANGES IN HUNGARY

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Abstract

Our research concentrates on the dairy, meat and bakery products' consumption in the Western-Transdanubian Region and its consumers' motivations. The liquid milk consumption is above the average of the product group. It is followed by the butter, ripened cheeses and fruit yoghurts which take precedence over traditionally Hungarian sour cream. Poultry and pork consumption are above the beef consumption in the region. It can be stated that white bread is the most preferred bakeries product; its consumption surpasses the consumption of all other products of the product group.

The most important point of view is the taste, the quality and the price of the product. Consumers lay almost the same stress on wholesomeness which is ranked on the fourth position. The producer and its national character are among the last motivations.

Keywords: health, behaviour, consumption frequency, dairy products, changing trends
JEL classification: M06

1. INTRODUCTION

Factors affecting food consumption came into the limelight of the scientific researches in the last decades of the 20th century. According to KOTLER (2000): "Marketing is too important to entrust it to one department". Marketing accompanies the life of the product, puts forward a proposal for the improvement of the products' characteristics and attraction evaluates the turnover of the product and points out the experiences of the distribution.

The experiences of the developed countries verify that that kind of market strategy can be successful which can handle the product improvement, the price strategy and the claims of the consumers accordingly and can be guided by the changing home market.

The manufacturers have to get to know the consumption and buying habits of the in-habitants, different target groups have to be determined for the different products and they have to adjust to the newest nutrition habits and trends to increase the sales.

It is supported by the fact that the market shares of the dairy products with low fat content and high content mineral substances arc increasing significantly, and the consumption of the fruit yoghurts is increasing, too.

On the other hand, it can be experienced that the consumption of basic dairy products like Liquid milk stagnates at low level, and it looks impossible to reach the 260-270 kg per capita dairy product consumption of the developed countries (SZAKÁLY Z., 2008).

Some of food companies still think that if they spend enough money on marketing, their investment will cover quickly. The managers think that marketing is the same as the sale, and they think it is more important to get a new consumer than to keep an old one. Instead of trying to satisfy their real claims, they put in the centre of the strategy the sale of the product (SZAKÁLY Z., 2001, 2008).

It is necessary to examine the buying and consumption habits to get to know the opinions of the Hungarian consumers about dairy products.

The most important aims of the research are the following:

1. Analysis of the consumers' and buyers' behaviour with primary research method in Hungary.
2. The demonstration of the changing consumption habits of the dairy products and revealing the future trends.
3. To get to know the characteristics of the milk and dairy product consumption frequency, the consumed quantity in the course of the different meals, the popularity of the different kinds of dairy products.
4. How often are milk and dairy products consumed in the course of different meals and what kind of dairy products arc the most characteristic.
5. This article shows the consumption habits in the years past.

The given answers may include important information about the buying and consumption habits for the experts who work in the field of food industry, mainly in the dairy industry. We can get some other important information about the separation of the different target groups, the popularity of the different dairy products and some anomalies (etc.: butter, margarine).

2. MATERIALS AND METHODS

During my work I applied the method of quantitative research. The research was based on quantitative survey within it on personal interviews. At setting up the samples was the basis the last national census of KSH in 2001. The preparation and the national representative interviews were carried out according to the following plan of sampling.

During the sampling a thousand individuals were chosen. This size of the sample provided on the one hand that the subgroups formed by different background variables will provide sufficient members to receive statistically reliable results, on the other hand that this number is general in the international and in the national market research and public opinion poll.

The personal interviews were carried out between October 2003 and summer 2004. At setting up the samples the primary aim was to ensure the representativeness of the sample. A many-stage sampling method was created to provide multiple-representativeness. (SZAKÁLY Z. 1994, HUSZKA P. 2006) The examination was done again in 2008 and 2009 in two regions of Hungary, where we examined the food consumption habits change because of the crisis.

The basis of the reliable results – over the representativeness – is that possibility of chance choice has to be provided. To this was applied the method of "random walking", which has characterise, that all people has the same chance, to came into the sample. The method "random walking" I combined with the method "birthday key" in home, so providing the chance in the second step, too. The essence of the method is, that those family member has to fill in the questionnaire, whose birthday is the nearest to the day of question.

For the easier processing the questionnaire made by me contains closed questions. In the most case the responders had to write their answers on a five-graded scale. This was easy to understand, and the results show good the opinion of the responders.

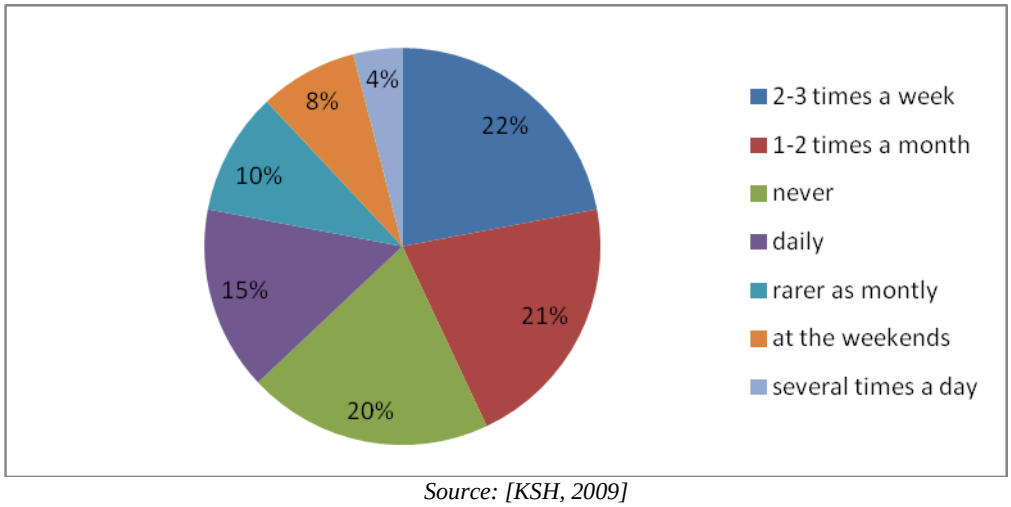
The processing of numerous data happened with the SPSS for Windows 9.0 and 16 mathematical-statistical programs. Besides calculating the averages, significance tests were conducted with Chi-square test, and for multiple analyses ANOVA, cluster and factor analyses were used.

With the rework of the method created by SZAKÁLY Z. (1994) and HUSZKA (2006) was shown the frequency of the consumption of dairy products. The frequency of the consumption had to mark on an eight-graded frequency scale. With using of the method was shown also the annually frequency of the products, that is how many times a given product is consumed annually in Hungary. If we divide the number of days in a year with the number of consumption cases in a year we can get, on which day we consume a given product.

3. RESULTS

3.1 Consumption of milk and dairy products or margarine

Figure no. 1 shows the annual consumption frequency of dairy products. The questionnaire survey results show that 22% of the buyers consume milk per week, 21% monthly, and about 20% of them never consume milk and dairy products. The latter value can be considered to be quite high.



Source: [KSH, 2009]

Figure no. 1 Percentage of consumers plotted against frequency

34% of the consumers consumed the liquid milk daily, 19% 2-3 times a week. The ratio of non-consumers was only 12%. The majority of respondents specifically liked the product. On the questionnaire was shown the "breakfast drink" such as dairy product. That product was by the majority of respondents (58%) never consumed, and they did not like, which may be regarded as positive. The sour cream was mostly popular and 40% of the respondents consumed 2-3 times a week, 31% per month, while the other major milk imitation the "frissföl" was disliked by the majority (52%) and did not eat at all (68 %). Nearly 37% of the respondents said the milk imitations as products made from milk.

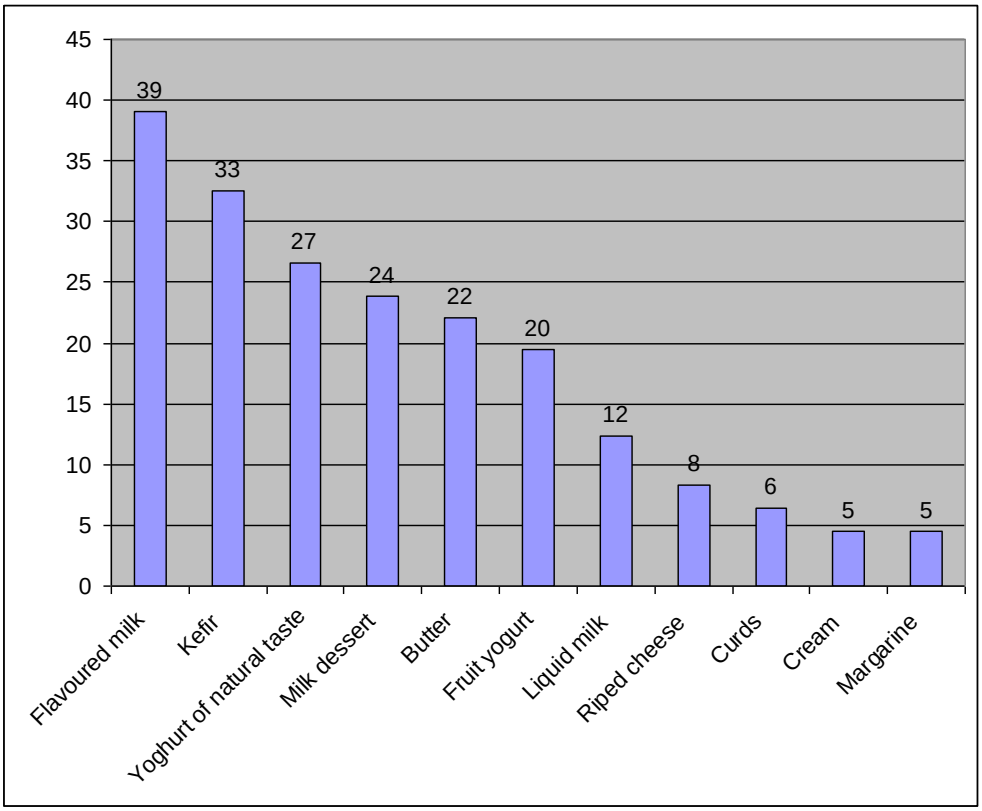
22% of the examined population has never eaten butter, and the same proportion consumed it daily. The margarine was used more frequently in meals. In case of this product reaches the rate of daily consumers 31% and only 4.5% do not eat this product. The reason of the lower butter consumption is likely past campaign against the butter.

47% of the tested sample consumed ripened cheese 2-3 times a week, while 23% in daily frequency, which was very popular. The curd cheese was consumed in monthly frequency (86%), yoghurt 2-3 times a week (38%), while milk dessert by 25% monthly and by the same number 2-3 times a week. The consumers liked all these products, particularly the yoghurts and milk dessert.

Next the consumption of different dairy products or margarine were examined, then the consumption frequency and we were curious to know how the consumption/non-consumption, then consumption frequency was formed.

The margarine consumption was examined because it is an important competitor of butter products (BERKE, 2003), on the other hand a big part of the consumers think it is a dairy produce.

The rate of non-consumers of different products in case of most important dairy products shows the Figure no. 2.



Source: [KSH, 2009]

Figure no. 2 The rate of non-consumers of different dairy products, plotter against frequencies

39.1 percent was the non-consumption of flavoured milk from the most frequent dairy products, 32.5 percent respectively 26.6 percent of the answerers said they never consume any "kefir" and yogurt of natural taste, as can be seen in Figure 2. It is in harmony with the popularity value of these products.

At the other end of the pole there are the sour cream with a value of 4.5%, the curds of 6.4%, ripened cheese of 8.3%. This goes to show that the rate of non-consumers in case of these products is low, that we can explain with a Hungarian national dish, noodles with cottage cheese as well as the Hungarian nutrition habits.

The rate of those who do not consume butter and liquid dairy products is 22.1% and 12.4%. The rate of margarine non-consumers, is 4.5%.

If milk and dairy products are examined together, and we want to know how many people do not consume any dairy products, we practise that this number is 19.5%. However, it can be proved that the overwhelming majority of the population consume some kind of diary product. While making a comparison between the data 2005 and 2009, we can see that the rate of non-consumers of different important dairy products is lower than before. The non-consumers of different products in case of most important dairy products were in 2005 25.9% (HUSZKA, 2006).

If we compare it with the fact that 24.4% of the population absolutely do not buy any diary product (SZAKÁLY S., 2001), then we can draw a parallel between these two facts, that the two values do not necessarily have anything in common, but the big similarity is notable.

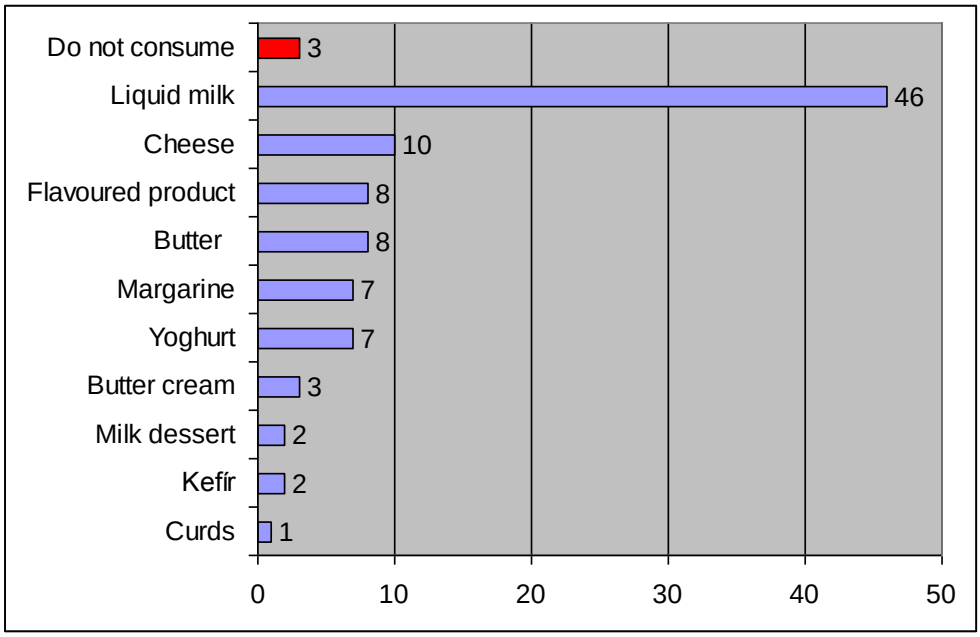
The reason for this is Hungarian nutrition habits, because plenty of consumers eat these much liked dairy products for breakfast or supper.

3.2. Consumption frequency of the milk and dairy products and of dairy products consumed in the course of different meals

We focused on the consumption frequency of the consumed dairy products and the products consumed at the different meals - breakfast, lunch, supper. We considered important how the diary products are divided between meals or how often consumers consume them.

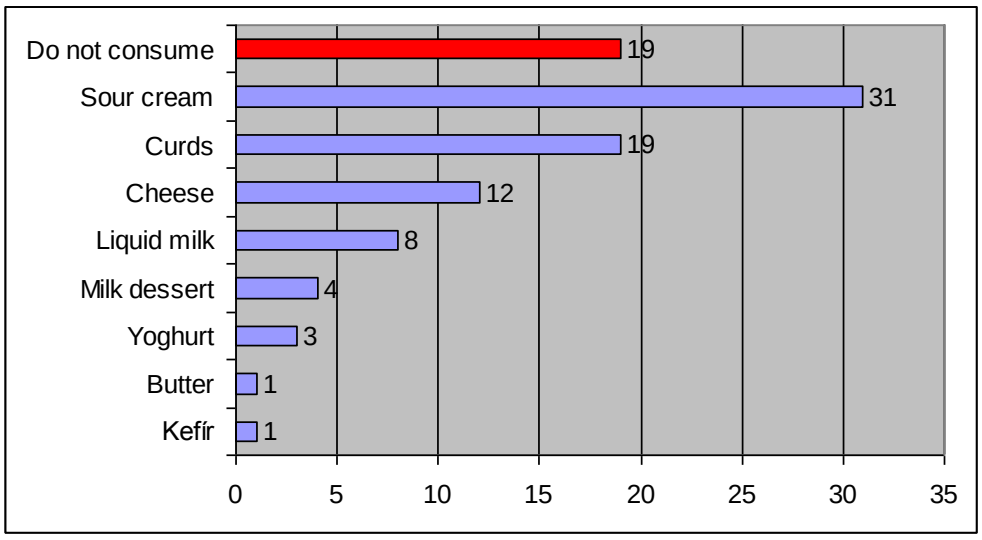
It can be stated that dairy products are consumed for breakfast most frequently (average per 1.5 days), any rarely (per 2 days) we eat that for supper. For lunch we eat only every 6th day milk products.

We finish demonstrating our consumption habits by showing the consumed dairy products for different meals. We considered important to ask consumers of what kind of products are consumed in the course of different meals. The question ran as follows: „Please, specify what kind of dairy products you consume most frequently." There are two reasons for this question being highlighted. One is because some answerers named more than one product, so the sample volume is more than 1,000. The other reason is that margarine and imitated dairy products were identified as dairy products (morning drink is mentioned 51 times, the fresh cream 6 times). The percentage division of the consumed dairy products for breakfast and lunch is demonstrated on Figure 3 and 4.



Source: [Own research, 2011]

Figure no. 3 Percentage distribution of products consumed for breakfast (n=1218)



Source: Own research, 2011]

Figure no. 4 Percentage distribution of products consumed for lunch (n=1150)

The data of Figure 3 show that the most popular product is the liquid milk for breakfast. Very high proportion of the consumers (46.3%) said that they consumed this kind of

dairy product most frequently for breakfast. The answerers did not distinguish the milk carton from the milk in plastic bag, so this number means the different milks together.

The second frequently mentioned product which is consumed for breakfast is the cheese with a share only of ca. 10%. If we take into consideration that cheese is not affordable for an „average Hungarian citizen" then this value cannot be considered low.

The proportion of the non-consumers is really favourable, only 3.2%, which means that most inhabitants consume some kind of dairy products for breakfast.

The most important dairy products, which are consumed for lunch, are shown on Figure 4. The most important difference is that the rate of the non-consumers is higher (19%) than in case of those consumers who consume dairy products for breakfast. On the other hand less products are mentioned due to the determined 1% limit. Sour cream (31.2%) and curds (18.4%) are consumed most often for lunch according to the results of the survey. It may be caused by different kind of Hungarian dishes or dairy products for different milk origin.

Milk desserts and yogurts can appear as an additional product to the main meal but the titbit eaters and gourmets play a role, too.

3.3 Examination of consumed quantity of milk and dairy products

The next question of my survey concerned the quantity of dairy products and margarine consumed during each meal. To become acquainted with the dairy product consumption habit is not enough just to know, how often we consume the products, but we have to know the consumed quantities, too. From the table 1 can be read some important results.

Table no. 1 Percentage division of quantity of some products consumed during meals

Quantity of Consumption / Name of product	**Never**	**1dl**	**2-3 dl**	**4-5 dl**	**6 dl +**
	%				
Liquid Milk	12.4	10.1	54.9	19.4	3.2
Flavoured milk	39.1	7.8	37.4	15.7	
	Never	**1/2packaging**	**1 packaging**	**2 packaging**	**3 packaging+**
Fruit yogurt	19.5	10.9	64.6	4.3	0.7
	Never	**100-400 g**	**50-100 g**	**110-150 g**	**160 g +**
Riped cheese	8.3	61.9	19.3	3.4	7.1
Butter	22.1	67.2	9.3	1.4	

Source: [Own research, 2011]

From the data of table can be seen, that 55% and 37% of the population consume decisively 2-3 dl liquid milks and flavoured milks. Regarding that only the 17,6% of the population consume the liquid milks several times a day, we can find: that milk quantity, which we consume, is not enough nutrition biological.

In connection with fruit yoghurts we can observe, that the big part of population likes it, so the big part of population consumes it, too. The share of not consumer is little.

Table no. 1 shows that big part of consumers eats cheese between 100 and 400 g. This data decreased in comparison with consumption in year 2005. Then was the cheese consumption between 50 and 100 g.

3.4 The segmentation of milk consumers by factor and cluster analysis

For planning a more effective marketing strategy in the milk sector, it was found to be important to segment the consumers asked on another way, too. The traditional segmentation methods (age, sex, qualification etc.) give in many cases not to the demands of the modern age proper results (TÖRŐCSIK, 2003).

I carried out the segmentation of consumers with factor and cluster analysis. With this we can to class the responders not only by consumption, but psychological characteristics.

Based on the selected 25 variables 6 very different factors were created. After the cluster analysis of the 6 factors, finally four clusters were created, with 938 censurers. These 938 consumers gave 100 percent, leaving out those who did not belong to any clusters.

"Consumers with traditional thinking" is considered as "Group A". 28.3% of the participants in the questioner belong to this group, most of them are women and older people (over 60 years of age). This group could be described as average income families, with average education from villages and small towns. On a daily base this group consume the most from the milk in bag (33.9%). The consumption of curd and sour cream of "Group A" is somewhat higher than the consumption of these products by the other groups. On the other hand their consumption of cheese, milk powder, and ice lolly and milk dessert is the lowest among all the other groups. The members of "Group A" prefer milk in bag, "kefír" and sour cream over the average of the other groups. During the last couple of years the regularity of other consumption habit could be considered the most stable.

"Group B" is the group with "consumers who are sensitive to the price" of the products. Mostly single or divorced, young or middle age males with smoking habits from the lower income segment of society. This group does not emphasize healthy eating habits as well. In this group prices of the products are the most important and they are the most likely to buy products on sale not showing any consistent preference for any brand names. They consume almost equal amount from milk in bag and milk carton. Their consumption of cheese is lower than the average. The consumption of milk powder is the lower in this group. In regards of the quantity of the milk consumption, it shows similarity to the other groups, from milk 2-3 dl and from fruit yoghurt 1 packaging per day.

The third, "Group C" could be described as the "segment of society with low social-economist status". Only 7% of the participants in the survey belonged to this group. Most of them are divorced and unemployment rate is the highest in this group (68.1%). Their undesirable place in society reflects their consumer habits. The selection of milk products is highly influenced by the packaging and advertisement of items. According to 32.7% of the participants in this group do not think that there is any relation between healthy eating and the amount of milk they consume. They strongly believe that the bacterial culture in yoghurt is not healthy for human consumption. The members of this group do not like "kefír", curd and sour cream, prefer to buy milk 1 or 2 times a week mostly half a litre packaging.

32.1% of the participants in the questioner belong to "Group D". This group could be described as a "people open for new concepts, and people with progressive thinking". Most often they are women from younger (16-25 years old) and older age (40-59 Years old) category. Their income is above average mostly from Budapest or from cities. 16.2% of them

are with university degrees. For this group the most important is the continuous quality of the products and the least important the price of the products. 67.3% of them think: Milk consumption will enhance the quality of health. The members of this group are open to try any new products and we could conclude that this is exceptional among the other groups. More than 70% of them consume fruit yogurt. Their consumption of nature yoghurt, ripened cheese, ice lolly, milk dessert, cream and butter is higher than any of the other groups.

3.5 Consumption frequency of meat products

In reference to meat products is the first main finding that the survey participants consume less carcase meat as milk. The highest consumption frequency have the poultry meat products (140.3) times per year. Table 2 shows the frequency of meat consumption.

Table no. 2 Number of annual consumption occasions of meat products, in days (n=207)

Products	Number of consumption occasions (day/year)
Poultry	**140.3**
Pork	**115.3**
Beef	**12.1**

Source: [Own research, 2011]

The top list of meat has not changed over the past years– compared to the survey of GFK (2002) - poultry is the most popular in the future too. If the number of consumption occasions is compared with the consumption frequencies, you get how many days average is the product on the consumer's table. Accordingly poultry dishes are consumed average 2.6 times a week today too, like 5 years ago, and slightly more than a year ago. The gradual rise in popularity can be explained both with the demand on healthy diet and with the change in price ratios between the meat sorts. The consumption frequency of meat is lower - as the per capita consumption volume is decreasing - probably because of the for pork unfavourable meat price ratios. This meat sort is consumed practically every 3 day. Beef consumption is otherwise at a low level (once a month) is stagnating. If we compare the above consumption frequencies to the domestic meat consumption and data, the results complement and support each other. According to the KSH data the poultry has been keeping its leading position within the total meat consumption for seven years, its ratio was 45 percent in 2005 and in 2006 too (nominally 31 kg per person). The share of pork from the total meat consumption was 42.3 percent (28 kg per person). The beef consumption, which is 5 percent of the total meat consumption, rose to 3.4 kg per capita in 2006 (KSH, 2008). BERKE's (2003) and LENDVAI's (2005) researches confirm our results and formulated a similar trend in consumption

3.6 Consumption frequency of bread and bakery products

In the market of bread sorts dominate the white bread in the future too. More than two-thirds of the respondents (69.7%) eat only such bread. Only brown (half brown) bread consumed only 2.5% of the respondents. It was more characteristic that the consumers eat this bread sort to make more varied their diet. The rolls are rarer on the customers' table; they are consumed likely by occasional, breakfast, snack and tea. This is popular typically among families.

An interesting finding is that almost one percent (0.89%) of respondents does not buy bread sorts; they probably make it themselves at home, or replace it with other cereals. In line with the above mentioned, as also from the Table 3. below can be read, the white bread is our most often consumed food, which eat we practically every day. To the presentations and the number of consumption occasions in the fourth illustrated in Table 3.

Table no. 3 Number of annual consumption occasions of bread sorts, in days (n=220)

***Products**	Number of consumption occasions (day/year)
White bread	**315.2**
Brown (half brown) bread	**35.4**
Baker's ware	**127.0**

Source: [Own research, 2011]

Interestingly, the popularity of white bread, caring for their health consumers is high enough. Still, the brown bread consumption is higher than the feeding or healthy people. The brown and white bread consumption frequency for just the opposite trend can be observed: the former to the 60 years of age, the higher educated and higher-income people, while the latter was just the reverse shows. Sharp differences in this respect, the people in smaller communities and also between those living in Győr: the latter, the frequency of brown bread consumption is much higher than in smaller communities. The so far observed regularities suggest that among the followers of reform kitchen can be found in more urban consumer.

4. CONCLUSIONS

The processing of the secondary data and evaluation of primary data results the following conclusions and suggestions. The conclusions can be applied on the one hand to cognise deeper the consumption and buying habits of domestic dairy products, meat and bread helped to plan the marketing strategic of food industry companies.

1. In case of many milk products is high the rate of non consumers. If we could these consumer groups with marketing work, advertisement, enlightenment actuate to consume, would increase the frequency and quantity of consumption of dairy products.
2. The sour cream was mostly popular and 40% of the respondents consumed 2-3 times a week, 31% per month, while the other major milk imitation the “frissföl” was disliked by the majority (52%) and did not eat at all (68 %). Nearly 37% of the respondents said the milk imitations as products made from milk.
3. In reference to meat products is the first main finding that the survey participants consume less carcase meat as milk. The highest consumption frequency have the poultry meat products (140.3) times per year.
4. In the market of bread sorts dominate the white bread in the future too. More than two-thirds of the respondents (69.7%) eat only such bread. Only brown (half brown) bread consumed only 2.5% of the respondents.
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