

EVALUATION OF FOOD CONSUMPTION HABITS IN TRANSYLVANIAN RURAL AREA – PRELIMINARY RESULTS

Pocol Cristina Bianca, C. Moldovan-Teslios, Laura Stan

¹*University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, Department of Economics, 3-5 Mănăștur Street, Cluj-Napoca 400372, Romania*

²*Metro Media Transylvania, Cluj-Napoca*

³*University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, Department of Food Science, 3-5 Mănăștur Street, Cluj-Napoca 400372, Romania, corresponding author, e-mail: laurastan@usamvcluj.ro*

Abstract. Food consumption habits could be determined by various factors: cultural identity, area of residence, economical and physical access, lifestyle. This article presents the preliminary results obtained from a quantitative study in rural regions of Transylvania. The research focused on the investigation of food consumption frequency for major food groups but also on the provenience of food consumed within the households. A number of 1190 subjects was investigated between February and May 2015. The results show a high consumption rate for food products derived from cereals. Pork and chicken meat is frequently preferred in rural households, a possible explanation being the tradition of consuming these types of meat as well as facile accessibility. A high consumption rate of fresh fruits and vegetables is a positive aspect shown by the study, the quantity consumed being covered by the internal household production. Further analysis of the collected data is required in order to identify the barriers between tradition and modernity and to create a food consumption pattern of rural households in Transylvania.

Keywords: food, consumption, behavior, rural, Transylvania

INTRODUCTION

According to the Food and Agricultural Organization of the United Nations, food security exists ‘when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life’ (FAO, 2008). Food utilization is one of the four aspects of food security. Food habits, food diversity and agricultural practices could have an important influence for accomplish the above-mentioned dimension of food security (Keding et al., 2012). Olney et al. (2009) demonstrated the positive impact of homestead food production on food diversity and consumption. The evaluation of food habits for both - urban and rural population - is an important topic for scientists. Monge-Rojas et al. (2013) demonstrated the association between fast food consumption and area of residence, living in rural area being a positive predictor for the consumption of this type of food. Grosso et al. (2013) made an evaluation of lifestyle and food habits of children and adolescent living in rural area of Sicily, Italy, food consumption frequency being assessed for the major food categories: pasta, rice, meat, fish, cheese, eggs, vegetables, fruits, sweets, snacks and fried foods. Mikolajczyk et al. (2009) analyzed the food consumption frequency of sweets, cakes, fast food, cooked vegetables, meat, fish, milk products and cereal products in relation with mental health, in three European countries: Germany, Poland and Bulgaria. Visschers et al. (2013) used the food frequency questionnaire for the consumer segmentation in relation to food consumption behavior in Switzerland. In order to evaluate the sugar intake from extrinsic sugar and confectionary foods, Naughton et al. (2015) also adapted and used items from a food frequency questionnaire. Keller et al. (2014) demonstrated the association between food

consumption habits and meal intake in the case of Spanish adults, by assessing the daily intake frequency of three food categories: milk and dairy products, fruits and vegetables. Based on the frequency of intake of 17 coarse vegetables, four clusters of Danish consumers were identified by Beck et al. (2015), the low culinary knowledge being the most important barrier for the consumption of these vegetables. The literature study demonstrates that food consumption information is collected for different purposes and fields of science: health studies or socio-economic studies (Pakkala et al., 2014).

In this context, the aim of the present study was to evaluate the food consumption habits of rural livelihoods in Transylvania, in relation with the socio-economic situation of Romanian rural space.

MATERIALS AND METHOD

The research area included households belonging to five cultural areas of Transylvania: area I (Sibiu and Brașov counties), area II (Bistrița-Năsăud and Sălaj counties), area III (Maramureș and Satu-Mare counties), area IV (Cluj and Mureș counties) and area V (Harghita and Covasna counties). According to the sampling scheme of Sandu (1999), these cultural areas are components of the historical region of Transylvania and were built by cluster analysis, using a set of social morphology indicators. The sample comprises 1190 households from rural area. The maximum margin of error was +/- 2,8%, for a confidence level of 95%. The settlements were randomly selected, from the list of villages belonging to the region under study. Households' selection was systematic, using a statistical step. The respondents were selected by using the following criteria: there were interviewed persons responsible for purchasing food and cooking in the household. The distribution of the respondents can be seen in Table 1.

Table 1

The respondents' distribution according to the 5 cultural areas of Transylvania

Cultural area	Number of respondents
Area I (Sibiu and Brașov counties)	230
Area II (Bistrița-Năsăud and Sălaj counties)	229
Area III (Maramureș and Satu-Mare counties)	306
Area IV (Cluj and Mureș counties)	272
Area V (Harghita and Covasna counties)	153
Total	1190

The questionnaire comprises several aspects related to food consumption behavior: family meals, purchasing habits, food conservation methods, consumption frequency of food and beverages, agricultural resources of the household (utilization of land, number of animals, cultivated plants, production obtained, and self-consumption versus selling of agro-food products obtained), living conditions, proximity to urban localities and socio-demographic questions. The period of applying the questionnaires was February-May 2015.

The purpose of the present article is to present preliminary results of this study, based on the assessment of consumption frequency for the main categories of food but also of the provenience of the food consumed (homestead food production and homemade products versus purchased food).

RESULTS AND DISCUSSION

The descriptive profile of respondents is presented in Table 2.

Table 2

The structure of the sample according to the main socio-demographic criteria

Socio-demographic characteristics		%
Gender	Male	49,9%
	Female	50,1%
Age group	Between 18-30 years	11,8%
	Between 31-50 years	38,5%
	Between 51-70 Years	34,4%
	Over 70 years	11,1
	NS/NR	4,2%
Education	Maximum 8 years of schooling	20,3%
	Maximum 10 years of schooling	22,9%
	High school	27,7%
	Post-high school	8,6%
	Higher education	17,9%
	I do not know, I do no answer	2,6%
Ethnicity	Romanian	79,0%
	Hungarian	15,3%
	Gypsy	1,7%
	Other ethnic groups or undeclared	4,0%

Food products derived from cereals (cereal flour, bakery products, pasta and noodles) although they presented a high consumption rate at least one a week -above 48% - (Table 3) they are, most often, purchased or offered and only a low amount - around 12% - (Table 4) produced at home. It is worth mentioning that 37% of the respondents declared that they do not consume whole wheat bread (Table 3), and the ones that consume this product, most often buy it - around 50% (Table 4).

Romanian traditional dishes contain boiled, fried or grilled vegetables and meat (especially pork and chicken). Therefore, the consumption yields of these food products - fresh vegetables, oil, pork and chicken (Table 3) are higher than non-traditional foods - turkey, fish and follow a similar pattern of consumption in terms of frequency (Table 4). Except sunflower oil, usually bought - 69%, (Table 4) all other food products mentioned earlier are entirely produced or very often produced (Table 4). It is worthwhile to mention that other healthy and nutritious meat sources like veal, lamb, fish and turkey are consumed rarely (one in a month or in a year) usually during seasonal holidays and therefore is mainly bought (Table 4). Canned meat and ocean fish are hardly consumed (around 35% according to data in Table 3). A high consumption rate of fresh fruits and vegetables was recorded (all together around 80% for daily or at least once a week consumption) and the necessary amount is mostly covered by household' production (Table 3 and 4).

The interference between urban and rural lifestyle is more evident in dairy products. They had a different consumption and production pattern. Usually, traditional households do not include the complex technology for cheese production. Therefore, natural dairy products like natural cow's milk and yoghurt are produced and consumed in the household, while dairy products like cheese, skimmed milk and dietetic yoghurt are not produced, but

rather entirely bought (Table 3, 4). Food supplements such as fish oil is mostly bought when needed, most of respondents do not consume it at all - 75% (Table 3). A study made in Australia about food preferences and habits among rural population shows that the diet of rural population is different from the diet of urban population: less rice and pasta, but more bread, fats and vegetables like potatoes, carrots and beans (Lupton, 2000). A high daily consumption rate of potatoes (49%) and sunflower oil (63,3%) is also shown by the results of the present study.

Table 3
Food consumption frequency within the household, in 2014, for major food groups (%)

	Daily, almost daily	At least once a week	At least once a month	1-2 times a year	Not at all	N/A	Total
1. White bread	85,3	7,6	2,1	1,2	2,1	1,7	100,0
2. Whole wheat bread / graham	10,8	18,1	16,7	13,5	37,0	3,9	100,0
3. Rice	2,2	55,0	38,0	3,5	0,3	1,0	100,0
4. Pasta, noodles	5,1	67,6	24,2	1,7	0,2	1,2	100,0
5. Cereal flour (wheat, rye)	14,7	48,8	20,3	5,9	5,2	5,1	100,0
6. Potatoes	49,0	48,0	1,6	0,2	0,0	1,2	100,0
7. Fresh fruits	43,5	44,4	10,0	0,8	0,1	1,2	100,0
8. Fresh vegetables	47,6	45,4	5,1	0,0	0,3	1,6	100,0
9. Canned vegetables	10,4	46,9	32,2	6,8	1,5	2,2	100,0
10. Natural cow's milk	60,1	27,9	6,2	2,5	1,3	2,0	100,0
11. Skimmed milk	5,7	11,7	11,6	11,1	52,0	7,9	100,0
12. Natural yoghurt and cheese	31,0	46,4	13,8	4,0	2,8	2,0	100,0
13. Dietetic yogurt and cheese	3,2	11,4	10,8	13,1	54,0	7,5	100,0
14. Cheese	12,0	34,5	30,0	11,3	8,9	3,3	100,0
15. Pork	25,2	59,3	12,0	1,6	0,7	1,2	100,0
16. Beef, veal	4,2	22,3	37,0	24,3	10,4	1,8	100,0
17. Lamb	1,4	9,0	17,2	55,8	14,8	1,8	100,0
18. Chicken	18,6	67,0	11,3	1,7	0,6	0,8	100,0
19. Turkey	2,1	9,2	18,9	32,8	33,4	3,6	100,0
20. Ocean fish	0,5	6,1	24,0	31,8	33,7	3,9	100,0
21. Fresh water fish	0,9	5,9	33,9	35,6	18,9	4,8	100,0
22. Canned meat	0,6	5,2	23,3	27,7	39,1	4,1	100,0
23. Canned pate	2,7	23,5	40,2	16,6	12,5	4,5	100,0
24. Sunflower oil	63,3	26,4	4,1	2,7	1,3	2,2	100,0
25. Fish Oil	1,0	2,3	3,2	9,8	75,2	8,5	100,0
26. Butter	17,5	40,3	28,8	6,6	4,3	2,5	100,0

Only those respondents who declared the consumption of different groups of food presented in Table 3, responded to the question: "Were the following foods produced in the household, bought or received?" (Table 4).

Table 4

The distribution of the respondents' answers to the question: "Were the following foods produced in the household, bought or received?" (%)

	Entirely produced	Most Often produced	Most Often purchased, received	Entirely purchased, received	N/A	Non consumption	Total
1. White bread	12,5	11,3	24,2	44,6	3,6	3,8	100,0
2. Whole wheat bread/ graham	1,9	2,9	12,2	38,3	3,8	40,9	100,0
3. Pasta, noodles	12,1	22,1	23,1	35,9	5,3	1,5	100,0
4. Cereal flour (wheat, rye)	12,3	12,6	19,4	40,0	5,4	10,3	100,0
5. Potatoes	58,0	17,4	7,3	11,4	4,7	1,2	100,0
6. Fresh fruits	26,3	34,5	18,7	14,1	5,1	1,3	100,0
7. Fresh vegetables	28,6	37,8	14,0	12,8	4,9	1,9	100,0
8. Canned vegetables	48,3	25,4	8,1	9,9	4,5	3,8	100,0
9. Natural cow'smilk	45,2	9,5	14,8	22,5	4,8	3,2	100,0
10. Skimmed milk	4,9	3,2	6,9	21,5	3,6	59,9	100,0
11. Natural yoghurt and cheese	31,1	15,1	16,2	26,8	6,0	4,8	100,0
12. Dietetic yogurt and cheese	3,0	3,1	6,4	22,1	3,8	61,6	100,0
13. Cheese	11,1	9,2	18,0	43,0	6,5	12,2	100,0
14. Pork	50,1	19,1	9,0	14,4	5,6	1,8	100,0
15. Beef, veal	23,2	11,9	19,3	27,9	5,4	12,3	100,0
16. Lamb	23,4	11,1	14,3	29,4	5,1	16,7	100,0
17. Chicken	45,2	22,1	10,3	15,5	5,5	1,4	100,0
18. Turkey	10,9	6,4	13,9	27,1	4,7	37,0	100,0
19. Canned meat	1,1	1,8	10,5	38,3	5,1	43,2	100,0
20. Canned pate	1,1	3,1	12,0	60,7	6,2	16,9	100,0
21. Sunflower oil	3,3	3,8	10,3	69,4	9,8	3,4	100,0
22. Butter	6,7	8,1	14,0	57,9	6,4	6,9	100,0

CONCLUSIONS

Food consumption habits in rural areas of Transylvania are characterized by a high rate of daily consumption for white bread, potatoes, fresh fruits and vegetables, cow milk and sunflower oil. The most frequent meats consumed are pork and chicken, this behavior belonging to a traditional pattern of food consumption in Romanian rural areas. Dietetic products such as yogurt of skimmed milk are not consumed very often. A possible explanation for this fact could be the lack of information regarding food content, or the lack of interest for a healthy diet. In the case of the following groups of food (fresh fruits and vegetables, canned vegetables, potatoes, pork and chicken meat), farm production plays an important role in compliance with food security in rural areas, more exposed to poverty.

REFERENCES

1. Beck, T. K., Jensen, S., Simmelsgaard, S. H., Kjeldsen, C., and Kidmose, U. (2015). Consumer clusters in Denmark based on coarse vegetable intake frequency, explained by hedonics,

- socio-demographic, health and food lifestyle factors. A cross-sectional national survey. *Appetite*, 91, 366-374.
2. FAO. (2008). An Introduction to the Basic Concepts of Food Security, available on line at www.foodsec.org/docs/concepts_guide.pdf, last accession date 9th of November, 2015.
 3. Grosso, G., Mistretta, A., Turconi, G., Cena, H., Roggi, C. and Galvano, F. (2013). Nutrition knowledge and other determinants of food intake and lifestyle habits in children and young adolescents living in a rural area of Sicily, South Italy. *Public health nutrition*, 16(10), 1827-1836.
 4. Keding, G. B., Msuya, J. M., Maass, B. L., and Krawinkel, M. B. (2012). Relating dietary diversity and food variety scores to vegetable production and socio-economic status of women in rural Tanzania. *Food Security*, 4(1), 129-140.
 5. Keller, K., López, S. R., Moreno, M. M. C., and Cantero, P. A. (2014). Associations between food consumption habits with meal intake behaviour in Spanish adults. *Appetite*, 83, 63-68.
 6. Lupton, D. (2000). The heart of the meal: food preferences and habits among rural Australian couples. *Sociology of Health & Illness*, 22(1), 94-109.
 7. Mikolajczyk, R. T., El Ansari, W., and Maxwell, A. E. (2009). Food consumption frequency and perceived stress and depressive symptoms among students in three European countries. *Nutr J*, 8(1), 31.
 8. Monge-Rojas, R., Smith-Castro, V., Colón-Ramos, U., Aragón, M. C., and Herrera-Raven, F. (2013). Psychosocial factors influencing the frequency of fast-food consumption among urban and rural Costa Rican adolescents. *Nutrition*, 29(7), 1007-1012.
 9. Naughton, P., McCarthy, M., and McCarthy, S. (2015). Acting to self-regulate unhealthy eating habits. An investigation into the effects of habit, hedonic hunger and self-regulation on sugar consumption from confectionery foods. *Food Quality and Preference*, 46, 173-183.
 10. Olney, D. K., Talukder, A., Iannotti, L. L., Ruel, M. T., and Quinn, V. (2009). Assessing impact and impact pathways of a homestead food production program on household and child nutrition in Cambodia. *Food & Nutrition Bulletin*, 30(4), 355-369.
 11. Pakkala, H., Christensen, T., Presser, K., and de Victoria, I. M. (2014). Towards harmonized data interchange in food consumption data. *Computer Standards & Interfaces*, 36(3), 592-597.
 12. Sandu, D., 1999, Spațiul social al tranziției, Editura Polirom, Iași, 87.
 13. Visschers, V. H., Hartmann, C., Leins-Hess, R., Dohle, S., & Siegrist, M. (2013). A consumer segmentation of nutrition information use and its relation to food consumption behaviour. *Food Policy*, 42, 71-80.