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Original

EL IMPACTO DE LA CRISIS ECONÓMICA EN LOS HÁBITOS ALIMENTICIOS DE LAS PERSONAS MAYORES EN GRECIA

THE IMPACT OF THE ECONOMIC CRISIS ON THE DIETARY HABITS OF OLDER PEOPLE IN GREECE

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**RESUMEN**

Desde el año 2009, Grecia ha estado pasando por una severa crisis socioeconómica debido a sus deudas. Esta condición afecta los hábitos nutricionales de los individuos. Los ancianos son uno de los grupos etarios que se han visto afectados. Este estudio investiga si la crisis socioeconómica ha conseguido cambiar los hábitos nutricionales y las elecciones alimentarias de los ancianos. La muestra consistió de 168 hombres y 132 mujeres. Se utilizó un cuestionario estructurado con preguntas cerradas. El muestreo se realizó en un centro urbano como así también en una zona rural. Los resultados demuestran que la crisis económica en Grecia es evidente. Los ingresos han disminuido (78% para los hombres y 75% para las mujeres). Se han recortado los alimentos en todos los grupos etarios y de ingresos. Todo el contexto de las reducciones parece alejar a los ancianos de los alimentos pertenecientes a la dieta Mediterránea y de los alimentos de alta calidad, ambos considerados caros, lo que tiene como consecuencia efectos en la salud.

Palabras clave: Dieta Mediterránea, hábitos alimenticios, estado nutricional, precios de los alimentos, estado socioeconómico, efectos en la salud, crisis financiera, economía de la nutrición, estilo de vida, austeridad

ABSTRACT

Since 2009, Greece has been undergoing severe socioeconomic debt crises. This condition affects the nutrition habits of individuals. The elderly is one of the age groups that has affected. This study investigates if socioeconomic debt crises has changed the dietary habits of the elderly and the way they buy food. The sample consisted of 168 men and 132 women. A structured questionnaire containing closed-ended questions was used. The sampling was performed both in an urban center and in the countryside. The results show that the income has decline (78% in men and 75% in women). There are food cuts in all age and income groups. The whole context of the reductions seems to move older people away from the Mediterranean diet and high-quality foods, both of which are considered expensive, with the consequent health effects.

Keywords: Mediterranean diet, dietary habits, nutritional status, food prices, socio-economic status, health effects, financial crisis, nutrition economics, lifestyle, austerity



INTRODUCTION

Since the year 2009, Greece has been undergoing one of the most severe debt crises in its history. Economists say that it has been the most serious financial crisis since the Great Depression of the 1930s (Panagiotakos & Foscolou, 2019). Compared to other countries, Greece has been the most severely affected by this crisis. In order to cope with it, Greece signed a Memorandum of Economic and Financial Policies in exchange to a 110 billion loan (Simou & Koutsogeorgou, 2014). The Memorandum included austerity measures and has affected various aspects of society. Greece has been severely affected by the economic downturn and it is a noteworthy example illustrating that the quality of care and patients' progress can be affected by the economic crisis (Kotsiou et al., 2018). As it is expected, the poor and vulnerable are affected the most.

According to the Greek statistical authority, unemployment among adults rose from 6.6% in May 2008, to 16.6% in May 2011 and the unemployment among the youth rose from 18.6% to 40.1% (Kentikelenis et al., 2011). People suffering from income and job losses, living in a demoralized social state caused by severe austerity measures and restrictive health policies, are exposed to the risk of developing depression or committing suicide (Madianos et al., 2014). Thus the quality of life (Mechili et al., 2015) and mental health in Greece due to unemployment has severely worsened.

The ministry of health has reported in 2011 a rise in suicides by 40% (Simou & Koutsogeorgou, 2014). There are regions where the suicide mortality rate did not change (Basta et al., 2018). In Greece, in 2011, the incidents of depression were about three times higher than in 2008, and it was found that the difficult economic situation was associated with major depression (Economou et al., 2013). It seems that the financial crisis had an impact on the mental health of the Greeks.

The economic crisis influences also dietary aspects. As a result of the crisis, many households have reduced the quality and quantity of food they consume. Therefore, they are at risk of malnutrition (Brinkman et al., 2010). The economic crisis increases the probability of obesity poor diet (Norte

et al., 2019). Dietary quality and eventually quantity decline, increasing micronutrient malnutrition and exacerbating preexisting vulnerabilities (Bloem et al., 2010).

Italy's paradigm shows that dietary changes have been observed due to the economic crisis. These changes are undesirable and the main findings are lower adherence to Mediterranean diet and reduced quality of grocery products. These changes concern mainly lower socioeconomic groups (Bonaccio et al., 2018). The Mediterranean diet is composed by use of olive oil, fruit, vegetables, legumes, cereals, moderate intake of wine and fish and fermented dairy products (Bach-Faig et al., 2011). The study "Challenges to the Mediterranean Diet at a time of economic crisis" concludes that socioeconomic factors are determinants of the adherence to the Mediterranean Diet (Bonaccio et al., 2016). According to an Italian research paper that studied 24,325 southern Italian citizens, the adherence to the Mediterranean Diet has considerably decreased (Bonaccio et al., 2014). The same conclusions have been drawn by another study in Greece that was conducted among 236 students, aged between 19 and 30 years old (Theodoridis et al., 2018). Generally, adherence to the Mediterranean Diet globally significantly decreased between 1961-65 and 2000-03, whereas from 2004 to 2011 the situation was stabilized (Vilarnau et al., 2018).

Other surveys have shown that Socioeconomic factors strongly influence Diet quality (Yannakoulia et al., 2016) and appear to be major determinants of the adherence to the Mediterranean Diet (Bonaccio et al., 2016). One possible reason is the increasing prices of some main food items of the Mediterranean Diet pyramid (Saulle et al. 2013). Another study conducted by a Spanish university using graduates as subjects concluded that the Mediterranean Diet was more expensive to follow than a Western Dietary pattern (Lopez et al., 2009). Food prices are a barrier for low income-families to healthier food choices (Lo et al., 2009). Generally, increases in food prices along with a financial crisis, contribute to a food safety crisis (Lo et al., 2009).

It has also been found that among the Greek elderly population, those belonging to the highest socioeconomic class demonstrate higher adherence to



the Mediterranean Diet compared to those of the lowest one (Katsarou et al., 2010). The ATTICA study showed that low socioeconomic class groups had less adherence to the Mediterranean Diet compared with high socioeconomic class groups thus likely explaining, at least in part, the higher cardiovascular disease risk factors profile observed among low socioeconomic class participants (Panagiotakos et al., 2008a; Panagiotakos et al., 2008b). Another study confirmed the relationship between low socioeconomic class and the incidence of cardiovascular disease (Kollia et al., 2016).

Among the age groups, children and the elderly, in whose case and nutritional and health surveillance is needed, are the most affected ones by the economic crisis (Christian, 2010; Pee et al., 2010). The latter age group suffers from pension and social welfare cut-backs. On the other hand, unemployment rates keep increasing. This situation is very bad because people at this life stage have higher demands—not only in financial terms but also concerning health care (Evans et al., 2001).

Table 1. Demographics

	Men N=138	Women N=162	P
Gender			
	56%	44%	
Age (years)			0,388
65-70	63,7%	71,2%	
76-85	28,6%	22,7%	
86+	7,7%	6,1%	
Education			0,540
Primary	6,5%	7,6%	
Secondary	81,5%	84,8%	
Tertiary	7,7%	3,8%	
Postgraduate	4,2%	3,8%	
Monthly Income			0,555
≤700 €	52,4%	49,2%	
701-1400 €	19,6%	25,0%	
1401-2800 €	16,1%	12,1%	
>2800 €	11,9%	13,6%	
Income during the crisis			0,868
Increased	3,6%	4,5%	
Decreased	78,0%	75,8%	
Steady	18,5%	19,7%	

Therefore, measures must be taken. The adverse economic environment has exacerbated unmet health needs. As a result, health policy actions and social policy measures are necessary (Zavras et al., 2016). Austerity-related stress was very high and should

alert key stakeholders. Mental health and suicide prevention interventions are crucial (Alexopoulos et al., 2019). Public health interventions should focus on older adults, particularly of lower socioeconomic



levels, in order to effectively reduce the burden of cardio-metabolic disease at the population level.

It is tempting to find out how the economic crisis has altered the purchasing power of the elderly and how food buying habits have changed. Low budget for food significantly affects senior citizens because malnutrition and low-quality foods have a negative impact on health. The elderly is particularly weak due to frailty and comorbidity. Therefore, the significance of the findings related to the high impact of the crisis on budget for food should make stakeholders take action and protect this vulnerable group.

The purpose of this study is to examine the impact of the socio-economic crisis on older people's food buying habits. In particular, it is interesting to see if consumer habits have changed, and specifically, if income has declined to such an extent that it is not sufficient and results in cuts (the food sector is more concerned). It also examines the consumption behavior of the elderly during the crisis regarding food.

Table 2. Consumption behavior during the crisis

	Men N=138	Women N=162	P
Income sufficiency			0,985
Sufficient	47,6%	47,7%	
Insufficient	52,4%	52,3%	
Consumption reduction?			0,513
Yes	96,4%	97,7%	
No	3,6%	2,3%	
Consumption reduction sections			0,292
Clothing/Footwear	19,6%	15,9%	
Entertainment	14,9%	22,0%	
Food	22,0%	15,2%	
Vacation	0,6%	2,3%	
Heating/Cooling	13,7%	12,1%	
Cosmetics	0,6%	0%	
Electricity, Water supply, Telecommunications	14,9%	10,6%	
Transportation	3,6%	4,5%	
Household equipment (furniture, electrical appliances, linen)	0%	0,8%	
Personal care products	1,8%	1,5%	
House cleaning products	0,6%	0%	
Health	1,8%	4,5%	
Education	6,0%	10,6%	
Transportation	0%	0%	



METHODS

The study constitutes a primary quantitative study using a questionnaire. In the present study, the elderly is considered to be over 65 years of age (Roebuck, 1979) and the financial crisis is defined as the unanticipated significant downturn in the economy (Lee & Makhija, 2009). The financial crisis is thought to have begun in Greece in 2009 (Panagiotakos & Foscolou, 2019).

The sample consisted of 168 men (63.7% were between 65 and 75 years old, 28.6% were between 76 and 85 and 7.7% were 86 and over) and 132 women (71.2% were between 65-75). Of those, 22.7% were between 76-85 and 6.1% were 86 and over).

The sampling was performed both in an urban center (Athens) and in the countryside (Karditsa and Chalkida). The participants were spotted in common areas (markets, cafes, parks, etc.). The criteria for admission to the survey were to be over 65 years of age, the ability to communicate in Greek as well as the ability to make their own food choices. Individuals residing in structures where others choose their diet were not included.

A structured questionnaire containing closed-ended questions was used as a data collection tool. It contained sections on demographic factors, income and consumption, way of buying foods and dietary habits of the elderly. The questionnaire was created from scratch based on literature data and research needs.

The gender, age, level of education completed (primary, secondary, tertiary, postgraduate) were recorded as well as income (reportedly lower than €700, €701-1400, €1401-2800, over €2800) and whether it changed after the crisis.

Consumer habits were also recorded and more specifically, areas in which there was a decline in consumption, whether the income is sufficient to meet the needs and food market criteria. Additionally, the number of visits to the supermarket per week, the frequency of bulk purchases, the amount spent and the use of shopping lists were also requested. Finally, dietary habits, i.e. the number of meals consumed daily as well as out-of-home meals, are examined.

The questionnaire was anonymously completed so we suppose we got the correct answers. No special tool used for checking the veracity of the answers. We collected data about the monthly income of the elderly, but the income sufficiency was subjectively stated.

In the present study, categorical variables are presented as relative frequencies. Categorical variables were tested using the χ^2 (Pearson Chi Square) test without sequential correction, and Fisher's exact test was used where conditions were violated. Where the Fisher test value could not be calculated, the Mode Carlo calculation method was used (where this is stated in this case). All statistical calculations were performed using SPSS 17.0 (SPSS, Inc, Chicago, IL, USA).

The principles of the Helsinki Declaration were taken into account while conducting the study. All participants were informed about the scope of the study, its purpose and objectives and agreed to participate without hesitation. Participation was anonymous and the data collected were used solely for the purpose of the survey and were not transferred to third parties. The researchers involved did not have any financial gain to carry out the study.

RESULTS

In terms of demographics (Table 1), the sample consisted of three hundred (300) individuals. The majority of the sample (56%) was men, while women were fewer (44%). The most populous group (67%) is the group of sixty-five to seventy-five-year-olds. In the field of education, the majority of the sample belongs to 83% of secondary education graduates, followed by those of primary education with 7%. In terms of monthly income, the majority of the sample (52%) has an income equal to or less than €700. Next comes the 701-€1400 group with 23%, followed by the €1401-2800 group with 13%. In most of the sample (77%), income has declined since the start of the financial crisis.



Table 3. Food consumption habits

	Men N=138	Women N=162	P
Supermarket visits			0,380
0	0%	0%	
1	0,6%	3,8%	
2	32,1%	34,1%	
3	50,0%	45,5%	
4	13,1%	12,9%	
5	4,2%	3,8%	
>5	0%	0%	
Massive supermarket purchases			0,805
Daily	4,8%	5,3%	
Twice a week	51,2%	55,3%	
Once a week	35,7%	29,5%	
Once a fortnight	7,1%	9,1%	
Once a month	1,2%	0,8%	
Money spent at the supermarket			0,874
0-99 €	0%	0%	
100-199 €	1,8%	2,3%	
200-299 €	18,5%	22,0%	
300-399 €	25,6%	24,2%	
400-499 €	54,2%	51,5%	
>=500 €	0%	0%	
Food purchase criterion			0,962
Price	33,9%	33,9%	
Quality	33,9%	33,9%	
Brand	16,1%	16,1%	
Label	13,7%	13,7%	
Country of origin	2,4%	2,4%	
Supermarket list use before the crisis			0,892
Yes	82,7%	83,3%	
No	17,3%	16,7%	
Supermarket list use during the crisis			0,722
Yes	54,8%	56,8%	
No	45,2%	43,2%	

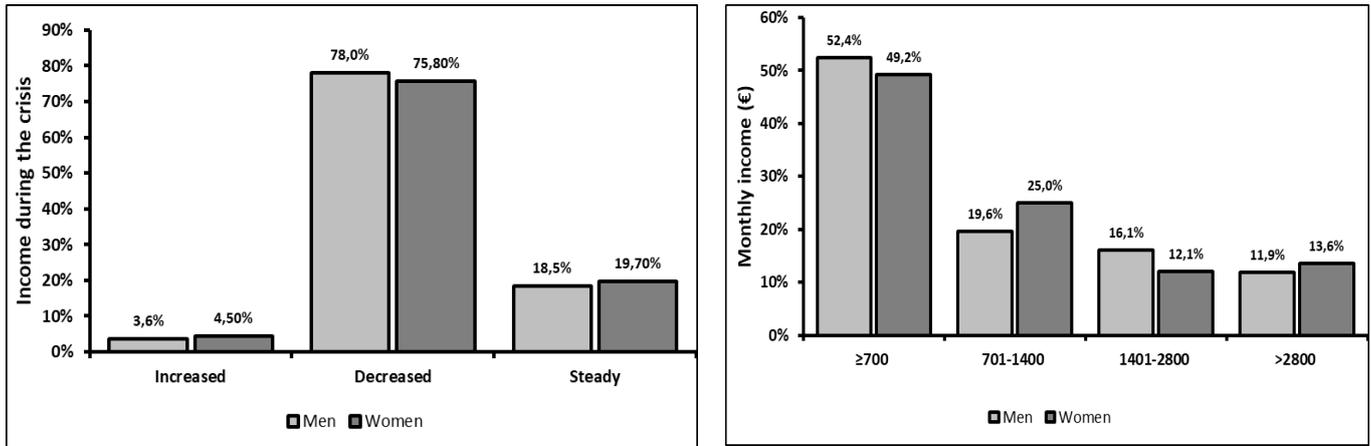


Figure 1 The result of the crisis: In three-quarters of the elderly the income has declined and in half of the population is below 700€.

With regard to consumer behavior in the crisis (Table 2), 52% of cuts are observed, while 48% of the respondents claim that their income is sufficient to meet the needs of the family. Consumption has fallen for the majority of the respondents, indicating 97.3%,

while the opposite is true for 2.7%. Consumption declines in the 'Foods' category, with 19%. Clothing / footwear and entertainment come next with 18% followed by the other categories.

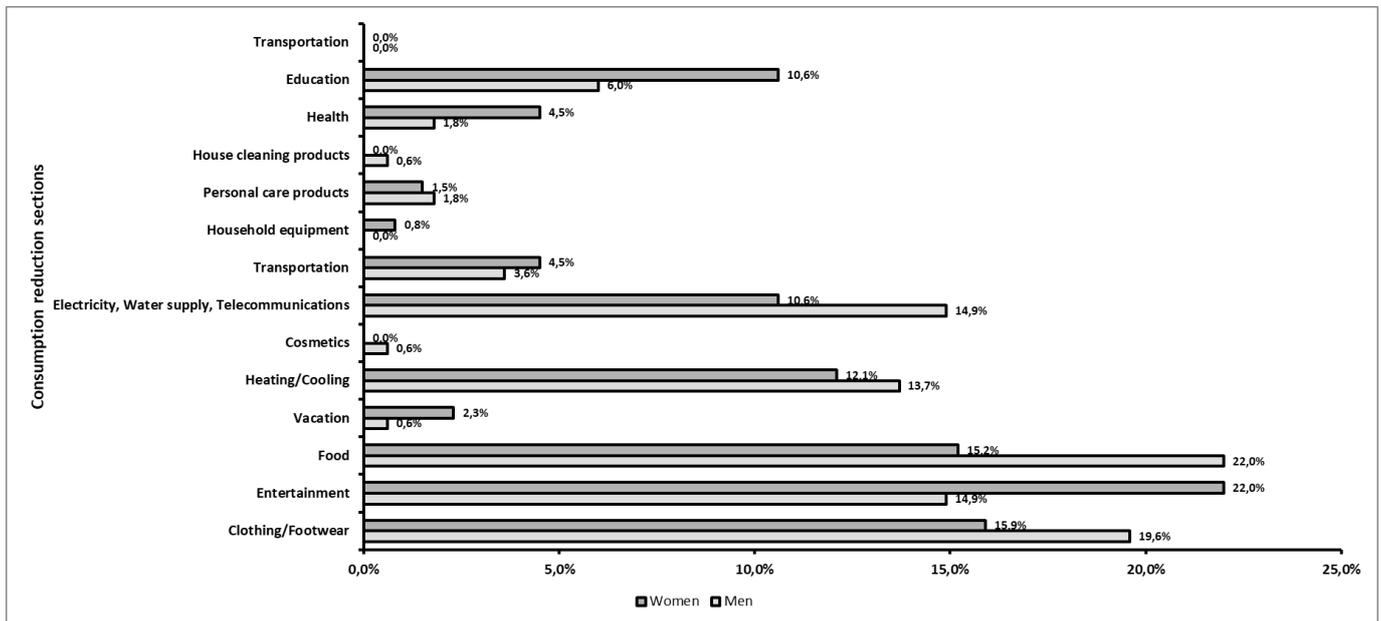


Figure 2 Consumption Reduction sections: The food section is one of the top 3 in spending reduction among the elderly

Regarding food consumption habits (Table 3), 48% of the elderly visit the supermarket three times a week, and 33% twice a week. The majority buys bulk foods twice a week with 53%. There is a monthly sum of €400-499 available for purchases at the supermarket, which is about 53%. This is followed by the share of 25%, which belongs to the group of

€300-399. 34% of elderly people buy according the price and quality when buying goods. This is followed by the brand with 17% and the label information with 13%, followed by the country of origin with 2%. Since the onset of the financial crisis, 56% of the elderly have been using a supermarket list. Finally, regarding dietary habits (Table 4), a



large proportion of older people (66,7%) consume on a weekly basis mainly lunch. This is followed by 28,3% of breakfast consumption. Finally, only 4.3%

consume intermediate meals, while evening meals are consumed by 0.7% of them. 60% of the respondents eat out once a week.

Table 4 Dietary habits

	Men N=138	Women N=162	P
Consumed meals			0,889
Breakfast	29,2%	27,3%	
Lunch	66,7%	66,7%	
Intermediate	3,6%	5,3%	
Dinner	0,6%	0,8%	
Consumed meals at home			0,936
Breakfast	31,5%	34,1%	
Lunch	61,9%	58,3%	
Intermediate	6,0%	6,8%	
Dinner	0,6%	0,8%	
Meals out			0,739
0 times	31,5%	35,6%	
1 time	61,9%	57,6%	
2-4 times	6,5%	6,8%	
5-7 times	0%	0%	
8 times and over	0%	0%	

Consumption areas where reductions were made did not differ by gender [F (300) = 13,866 p> 0,05 (Mode Carlo)], age [F (300) = 29,355 p> 0,05 (Mode Carlo)], education [F (300) = 40,887 p> 0,05 (Mode Carlo)], income [F (300) = 30,847 p> 0,05 (Mode Carlo)]. Men choose clothing / footwear and food. Women choose entertainment and food. The age group 65-75 makes reductions in clothing / footwear and food, the age group 76-85 in food and entertainment and finally the age group 86+ in fun and clothing / footwear. The different education groups include food, fun and clothing / footwear.

It is interesting to check whether income affects food cuts. The test shows that income does not affect food choice reduction [χ^2 (3,300) = 3,280 p> 0,05]. The food purchase criterion is gender-independent [F (300) = 0,638 p> 0,05], age [F (300) = 2,237 p>

0,05], education [F (300) = 9,867 p> 0,05] and income [F (300) = 9,368 p> 0,05 (Carlo Mode)]. Both men and women mainly choose foods with price and quality criteria. The same applies to all age, educational and income groups.

Meals consumed out did not differ by gender [χ^2 (2,300) = 0,604 p>0,05], age [χ^2 (4,300) = 1.88 p> 0,05], education [F (300) = 3,525 p>0,05] and income [F (300) = 3,296 p>0,05]. The most common answer is once and this applies to both sexes, all ages and all educational and income groups.

DISCUSSION

Greece undergoing economic crisis since 2009. The view that this is a major crisis (Panagiotakos & Foscolou, 2019) seems to be confirmed as the rate of income decline is 78% for men and 75% for women.



It is also evident that the elderly group has been significantly affected (income reduction, consumer cuts, food cuts), as also stated by the literature (Evans et al., 2001).

The food cuts described in the literature (Bonaccio et al., 2018) are present as food cuts are described in all age groups and income groups. Moving away from the Mediterranean diet (Bonaccio et al., 2014) is possible as it is expensive (Saulle et al., 2013) and there is a tendency for cuts. The view that higher socioeconomic classes make fewer food cuts and therefore more in line with Mediterranean diet (Katsarou et al., 2010) does not appear to be confirmed as there is no correlation between income and food prospects.

Interestingly, the income is 52% below €700, while the most common consumption (54.2%) is at 400-€499 and it is very difficult to fall below €200 (1.8%). Therefore, it seems that a large amount of income is consumed in food.

We have to mention that some results could be biased because a part of the sample comes from rural areas and these individuals could grow and harvest their own food and not buy in supermarkets. Or at least there is no comparison between the rural and the urban population.

CONCLUSIONS

The present study shows that the socio-economic crisis has affected the way older people in Greece buy food. Food cuts are, among other things, a high priority. As a rule, there are 3 visits to the supermarket, of which 2 are mass shopping. Foods are chosen primarily because of their price and quality, and one in two uses a list to better control their food consumption. There are other causes of change in dietary habits besides the financial situation (which is 44% in males and 50% in females), with health being the most important one. The most common way to cut costs is to look for the same products in other stores at a lower price, followed by purchasing with the same frequency only the necessary. The most common meal consumed is lunch and breakfast is consumed by one in three.

About one meal a week is consumed out. The whole context of the reductions seems to move older people away from the Mediterranean diet and high-quality foods, both of which are considered expensive, with the consequent health effect.



Table 5 Questions used in this study

<i>Demographics</i>	<i>Food consumption habits</i>
What is your gender? Man Woman	How often do you visit the supermarket per week? 0 visits 1 visit 2 visits 3 visits 4 visits 5 visits >5 visits
What is your age? 65-70 76-85 86+	How often do you make massive supermarket purchases? Daily Twice a week Once a week Once a fortnight Once a month
What is your Education level? Primary Secondary Tertiary Postgraduate	How much money do you spend at supermarket per month? 0-99 E 100-199 E 200-299 E 300-399 E 400-499 E >=500 E
What is your monthly income? ≤ 700 € 701-1400 € 1401-2800 € > 2800 €	By what criteria do you buy food? Price Quality Brand Label Country of origin
Your income during the crisis has: Increased Reduced Remained unchanged	Before the financial crisis, were you using a shopping list for the supermarket? Yes No
<i>Consumption behavior during the crisis</i>	After the financial crisis, do you use a shopping list for the supermarket? Yes No
Is your income sufficient to properly meet your family's daily dietary needs? Sufficient Insufficient	
Have you reduced consumption during the economic crisis? Yes No	
In which sectors have you reduced consumption? Clothing/Footwear Entertainment Food Vacation Heating/Cooling Cosmetics Electricity, Water supply, Telecommunications Transportation Household equipment (furniture, electrical appliances, linen) Personal care products House cleaning products Health Education Transportation	

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