

## Consumer Attitudes to Sustainability and Eco-Innovations

by

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*Abstract.* Author in the paper presents consumer attitudes to sustainability and environmental policies based on peoples' perceptions of humankind. The research is based on the analysis of results of qualitative study which examines understanding human behavior in broad sense and understanding of public response or lack of response to environmental policies. Further we analyze European Union approach to sustainable consumption. On the basis of Flash Eurobarometer 367 we analyze the results for EU 27 in comparison with Slovakia on citizens' behaviors and attitudes towards environmentally-friendly products, consumer buying criteria, respondents' views and activities on how to solve environmental problems, their confidence in environmentally-labeled products, social norms behind buying and using environmentally-friendly products. We complement the Flash Eurobarometer 367 results for Slovakia with study of attitudes of Slovak consumers to organic food health benefits and environmental impact and derive conclusions in suggesting effective policies and activities to improve sustainable behavior.

*Key words:* Sustainability, sustainable consumption, environmently-friendly products, environmently-friendly behavior, eco-innovations

JEL classification: D10, Q01

### 1 Introduction

The great challenge faced by economies today is to integrate environmental sustainability with economic welfare by decoupling environmental degradation from economic growth and doing more with less. This is one of the key objectives of the European Union, but the consequences of climate change and the growing demand for energy and resources are challenging this objective. It is now time to move towards an energy and resource efficient economy. Vision of changing consumption patterns toward more sustainable "less is more" attitude is hampered by production and consumption culture from industrial era. In post-industrial countries producing less and shopping less is seen as a thread for companies, employees and consumers. Companies are used to think that following the principle of "less is more" leads to falling sales and profits. Employees are used to think that it leads to losing jobs and employment and consumers think that it leads to shrinking their quality of life (Hall – Hübner, 2012). Changing this model of wealth creation to more sustainable one is much more cultural and social challenge than technological. The

sustainable development of our societies and economies can only be reached and safeguarded if we significantly reduce the material turnover, volume and hazard potential of production, distribution and consumer waste going to landfills by changing production and consumption patterns which leads to new paradigm in creating welfare for all stakeholders (Vogel, 2012). *Objective of the paper* was to analyze environmentally relevant consumer behavior and consumer attitudes to green products, identify values that drive current society lifestyle, and specify factors that influence environmentally relevant consumer behavior.

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### 2 Environmentally relevant consumer behavior

A. Fisher (2010, p. 123) in his works suggests that *views on the sustainability and environmental policies might be related to*

*people's perceptions of humankind*, rather than the specific object of the policy, whether it's energy, natural resources conservation or climate change. In those regions where people are generally perceived as selfish and uncaring for the others, policies based on voluntary contributions and voluntary restrictions will not be considered effective. Several studies have addressed the relationship between trust in politicians and the people they support government policies. Just fewer studies addressed the relationship between trust to other human beings and the impact of this trust on the environmental attitudes and behavior. I. Lorenzoni (2007, p. 445) identified a lack of confidence in the government and other people as one of the barriers, which eliminates taking action on climate change. A. Fisher in his qualitative study in five European countries (Czech Republic, Netherlands, Hungary, Germany and the UK, Scotland) examines understanding of the issue of climate change, energy and resource consumption, subject to their own behavior and the behavior of other people, potential future changes in sustainable consumption and effective institutional arrangements (Fisher et al., 2011, p. 1026).

Understanding of people's ideas about human behavior may help to improve our understanding of public response or lack of response to environmental policies and shed more light to the gap between consensus about unsustainable contemporary lifestyle and lack of action. In all five countries, respondents identified the same key characteristics of human behavior. First, people were characterized as *inherently selfish*, considering only their own interests or the interests of their close relatives. Next, people were characterized as *governed by habit and/or convenience*. Acquired habits of respondents were perceived as unchangeable and irreversible, which has been mentioned several times in the debate about broader behavioral change. Major change in the whole society is difficult if not impossible to achieve due to human inertia. Thirdly, *money* was often regarded as the only factor that could change people's behavior. It was usually mentioned in opposition to change guided by moral insight or voluntary action. In addition to these

fundamental views on human nature, respondents indicated the specific characteristics of people in relation to energy and sustainable consumption, namely (a) *lack of knowledge and information* for the correct response, (b) *short-term thinking at the expense of the future*, which was often mentioned as an explanation for unsustainable behavior. Most study participants recognized that their behavior was faulty, but they had the tendency to present themselves as fallible, but well-meaning, rather than ignorant and uncaring. Assessment of one's character was less negative as general human nature. Contemporary society was characterized as focusing on *consumption* (sometimes even to consumerism), the *individualism* and *globalization*. People used to have full freedom in resource consumption and complacency stemming from consumption. Respondents felt the lack of reciprocity, cooperation and sense of community. Individualism and trend to further individualization seems to hamper cooperation and collective action. Globalization effects were seen in the availability of exotic food and remote holiday destinations, the achievement of which consume a lot of energy and resources. Based on the results of qualitative research solutions for sustainability can be effectively implemented by strict legislative regulation, governmental action, price mechanisms, education, and on the basis of technological change. Many participants suggested an increased use of renewable energies and efficient technologies, ideally organized by governments. Technology change was prioritized over social change as realistic approach to reduce resource use by replacing old product by new ones with much lower energy consumption and resource use (Fischer et al., 2011, p. 1027).

## **2 Consumer attitudes to environmentally-friendly products**

Green products or environmentally-friendly products were defined as having less negative impact on the environment during production, use and disposal compared to other products (with the same functionality, addressing the

same need, etc.). Consumer survey Flash Eurobarometer 367 was conducted to examine EU citizens' knowledge of green products and their reasons for buying, or not buying, environmentally-friendly products. The survey was carried out in the 27 Member States of the European Union and in Croatia in December 2012. The report focuses on EU citizens' attitudes towards environmentally-friendly products in six parts:

- EU citizens' behaviors and attitudes towards environmentally-friendly products;
- the influence of environmental considerations on EU citizens' consumption habits;
- respondents' views on actions to solve environmental problems;
- consumers' confidence about environmental claims made about products;
- sustainable consumption issues related to food, including food expiry dates and meat consumption;
- product lifespan issues, looking at consumer knowledge, product reliability and the willingness to repair products.

In the paper we analyzed the behavior of EU 27 citizens and citizens of Slovakia to see the country specific issues.

A majority of respondents consider themselves “occasional” environmentally-friendly products consumers (54 %). More than a quarter of respondents often buy environmentally-friendly products (26 %). A majority of citizens in the EU 27 agree that green products are good value for money (55 %). We can segment EU citizens into six categories according their shopping behavior:

*Regular maintenance* – often buys environmentally-friendly products.

*Occasional maintenance* – sometime buys environmentally-friendly products.

*Ready for action* – do not buy environmentally-friendly products but definitely intend to do so in future.

*Contemplation* – do not buy environmentally-friendly products but may do so in the future.

*Relapse* – used to buy environmentally-friendly products but stopped.

*Reluctant* – have not bought environmentally-friendly products and do not intend to do so.

Proportion of citizens classified in individual categories is featured in Figure 1.

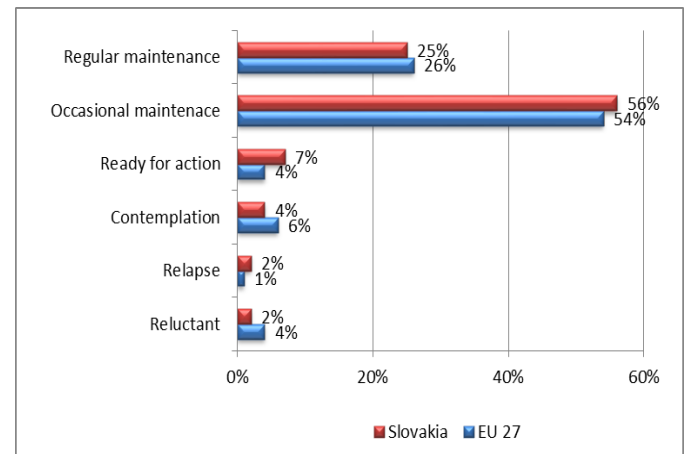


Figure 1. Consumer segmentation by shopping behaviour  
Source: based on Flash Eurobarometer 367 results

Across European countries there is a variation in behavior. The *maintenance* behavior stages (regular and occasional) are the most common in every EU Member State and Croatia with more than 60 % of citizens are at this stage in every country. Citizens are most likely to be at a *maintenance* behavior stage in Austria (93 %), Germany (90 %) and Sweden (89 %). Austria is the only country where the relative majority of citizens are at the *regular maintenance* behavior stage (48 %). This behavior is also prevalent in Germany (37 %). The *ready for action* behavior stage is most common in Bulgaria (11%), Romania (8%), the Czech Republic (7%) and Slovakia (7%). Green market in these countries has the highest potential to attract new customers.

95 % of all respondents are aware of what environmentally-friendly products are. Only 55 % of them agree that green products are good value for money. In Slovakia it is surprisingly high number 69 %, which is not in line with shopping behaviour. Results for EU 27 and Slovakia are presented in Figure 2. Respondents who often buy environmentally-friendly products are much more likely to agree that environmentally-friendly products are good

value for money compared to those who only sometimes buy these products (68 % and 53 %, respectively). This is the only aspect where these two categories really differ, which suggests that *lowering the price gap* between green and non-green alternatives would enlarge the number of regular consumers.

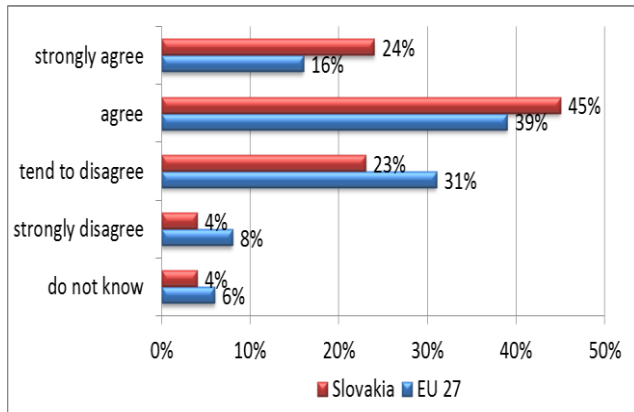


Figure 2. Environmentally-friendly products as good value for money

Source: based on Flash Eurobarometer 367 results

Large majorities of EU citizens believe that buying environmentally-friendly products can *make a difference to the environment* (89 %) and that environmentally-friendly products are as effective as regular products (74 %). Across European countries, there is only a small amount of variation in agreement that buying environmentally-friendly products can make a difference to the environment. Slovak respondents are even more positive than EU 27 respondents in their trust that environmentally-friendly products can *make a difference to the environment* (91 %), and they are less positive about effective behavior of environmentally-friendly products (70 %). It seems that consumers express strong social relevance of buying and using environmentally-friendly products. 95% of respondents agree that using environmentally products is *'the right thing to do'*, 91% agree that buying environmentally-friendly products sets *a good example* and 80% agree that *their family and friends* would think it was a good thing if they used environmentally-friendly products. Social norms behind buying and using environmentally-friendly products in EU 27 and Slovakia are presented in Figure 3. Slovak

respondents are in somewhat bigger agreement (97 %) than EU 27 respondents (95 %) that using environmentally-friendly products is *a good thing to do*. Majority of them is in strong agreement (77 %) compared to EU 27 respondents (63 %). Slovak respondents were in higher agreement with their family and friends opinion on using environmentally-friendly products being a good thing (90 %) compared to EU 27 (80 %). Social pressure may have been a factor that influences Slovak respondents to environmentally-friendly behavior and it pushes *ready for action* respondents towards these products as their strong agreement is higher (83 %) than in occasional maintenance group (81 %). Social norms results are presented in Figure 3.

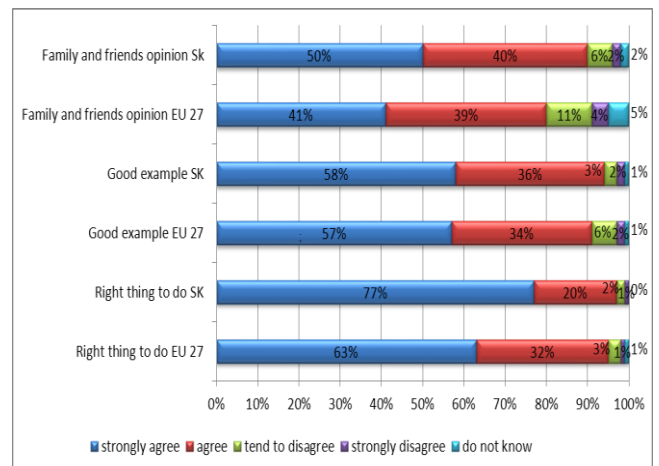


Figure 3. Social norms behind buying and using environmentally-friendly products

Source: based on Flash Eurobarometer 367 results

Only just over half of EU citizens think that environmentally-friendly products are easily available in shops (54 %) and a similar proportion believe that it is easy to differentiate environmentally-friendly products from other products (51 %). Environmentally-friendly products are most likely to be seen as easily available in Sweden (81 %) and least in Estonia (40 %). In Slovakia there may be a problem with availability of green products as only 49 % of respondents agree that they are available in comparison with EU 27 average (54 %). The view of Slovak respondents about differentiation of green product is in agreement with EU 27 respondents. Availability and differentiability is presented in Figure 4.

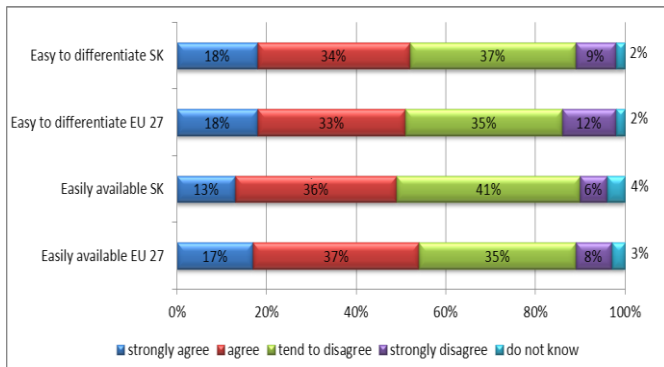


Figure 4. Availability and differentiability of environmentally-friendly products

Source: based on Flash Eurobarometer 367 results

Two-thirds of EU citizens (66 %) are confident that products indicated as environmentally-friendly will cause less damage to the environment than other products. In Slovakia this percentage is smaller (60 %). Confidence in environmentally-friendly products is presented in Figure 5.

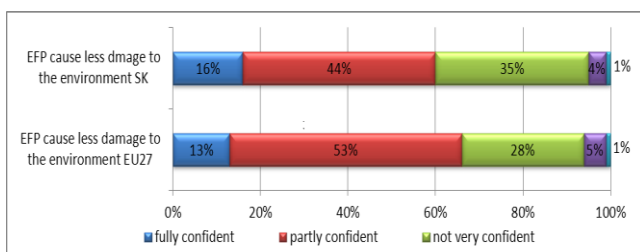


Figure 5. Confidence in environmentally-friendly products

Source: based on Flash Eurobarometer 367 results

Confidence differs in different shopping behavior groups in EU 27. Nearly three quarters of *regular maintenance* respondents report that they are confident that environmentally-friendly labeled products cause less damage to the environment (73%). The confidence is substantially lower among respondents who occasionally purchase environmentally-friendly products (66%). This trend continues with even lower confidence among the *ready for action* (63%), *contemplative* (59%), *relapse* (45%) and *reluctant* (39%) behavior stages. These results suggest that policies that increase consumer confidence in the environmental claims of green products would encourage greater consumption of these environmentally-friendly products across all behavior groups, even if these products were somewhat more expensive.

Despite several policy and marketing initiatives, only slightly more than half of EU citizens feel informed (55 %) about the environmental impacts of the products they buy and use, with 14 % saying they 'know a lot' and 41 % saying they know about the most significant impacts. These awareness levels are similar to those found in 2009 and similar to Slovak respondents with 18 % and 39 % respectively. There is a big place for improvement in communicating environmental impacts to European consumers.

EU citizens take several considerations into account when buying products. The results for EU 27 and Slovakia are presented in Figure 6.

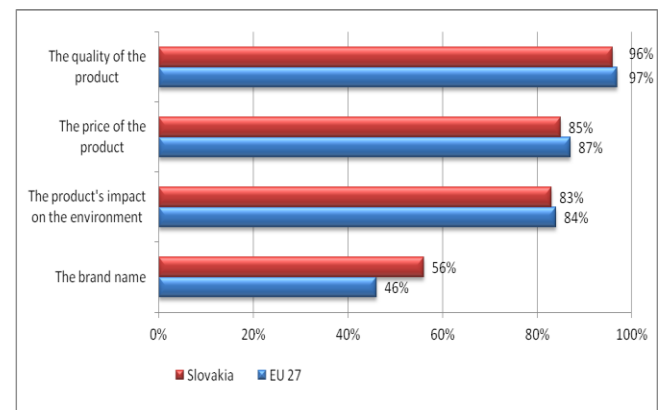


Figure 6. Consumer buying criteria

Source: based on Flash Eurobarometer 367 results

The quality of the product is the most important consideration for consumers (97 %) followed by the product's price (87 %) and its environmental impact (84 %). The least important factor to consumers is the brand name of the product (46 %). There has been a significant increase in the number of respondents who say that the environmental impact is more important than price in a purchasing decision since 2009 (25 %, + 6 points). For Slovak consumers the trend is the following: the quality of the product is also the most important criterion with growing trend (96 %, +1 point) followed by the product's price with decreasing importance (85 %, -5 points) and its environmental impact with growing importance (83 %, +13 points). The least important factor to consumers is the brand name of the product (56 %, -1 point) which is more important for Slovak consumers than for European 27.

Europeans support taking a variety of actions for environmental reasons, and they are increasingly changing their behavior. EU citizens believe the actions that would have the greatest impact on solving environmental problems are recycling and minimizing waste (54 %), and buying low energy consumption home appliances (39 %). Activities with greatest impact to environment reported by EU 27 and Slovak respondents are featured in Figure 7.

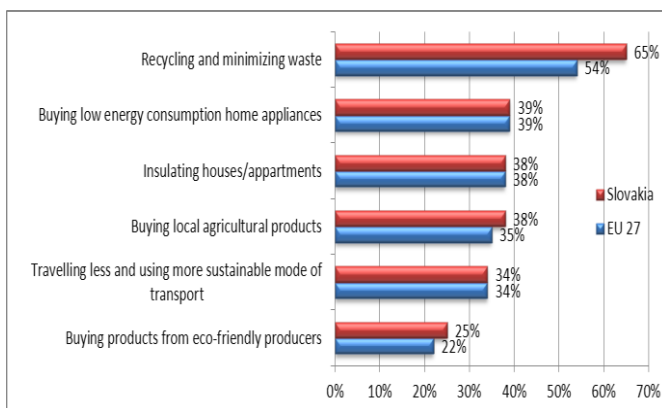


Figure 7. Activities with greatest impact on solving environmental problems

Source: based on Flash Eurobarometer 367 results

Majority of EU citizens do not think current product labels provide clear information about product environmental impact. The results are presented in Figure 8.

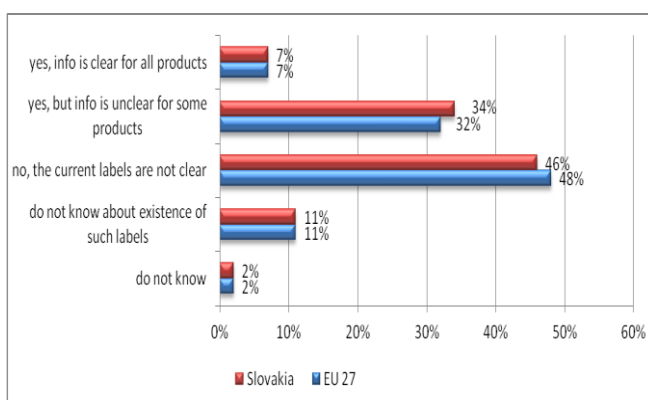


Figure 8. Clarity of environmental impact information

Source: based on Flash Eurobarometer 367 results

Six out of ten EU 27 respondents think that current product labels do not provide enough information about their environmental impact (59%), with half who think the labels are not clear (48%) and one in ten do not know about

the existence of product labels that provide information on environmental impact (11%). Although citizens generally think that there is too little information on product labels about environmental impact, they are generally confident that products labeled as environmentally-friendly will cause less damage to the environment than other products (66%). This may indicate that consumers feel environmental labels only give a vague indication of a product's environmental impact. Respondents trust the label but would also welcome more information. For Slovakia the findings are very similar.

Only just over half of EU citizens (52 %) generally trust *producers' claims* about the environmental performance of their products. This represents a small increase in trust since the previous survey in 2009 (+3). In Slovakia 59 % of respondents expressed the confidence to producers' claims. A majority of EU citizens do not trust companies' reports on their own environmental performance (54 %), with only 44 % trusting these reports. There is strong support among EU citizens (69 %) and in Slovakia (67 %) for obliging companies to publish reports on their overall environmental performance and the environmental performance of their products.

## 2.2 Consumer attitudes in food consumption

There is a trend of changing the habits of meat consumption for environmental reasons. From Flash Eurobarometer 367 it is evident that four out of five respondents would be willing to eat less meat but of certified origin (80 %) and three quarters would be willing to replace beef or pork with poultry or fish (72 %). In Slovakia the trend is even stronger, it is 88 % and 77 % respectively. Similar results are seen in will to replace the meat with vegetables 50 % of EU 27 respondents wish to do so as well as 53 % of Slovak respondents.

A large proportion of respondents (45 %) believe that it is NOT safe to consume food products after the "best before" date stated on the label while in Slovakia the percentage is much higher (73 %).

Research team of the Department of Commodity Science and Product Quality executed a study focused on consumers' attitudes to organic food as part of examining attitudes to eco-innovations. A significant benefit of organic food – not only to human health or the environment, but also with regard to their economic benefits, lack of awareness of potential consumers about the positive aspects of their production and consumption in relation to marketing communications as one of the main ways to improve the current situation (in under increasing public awareness) – are the main motives to address the problem (Lacková et al., 2012). Answers to the question related to *the respondents' trust to the organic food* (as products of organic farming, i.e. guarantees of certain standards in relation to their production and processing), are important as an indicators of the overall attitude of consumers to these products. The survey shows that more than a half of respondents (62 % of the total 209 responses) *do trust* the organic food offered on the Slovak market, 23 % of respondents were not able to answer this question and 15 % of respondents *do not trust* the organic food offered on the domestic market as presented in Figure 9.

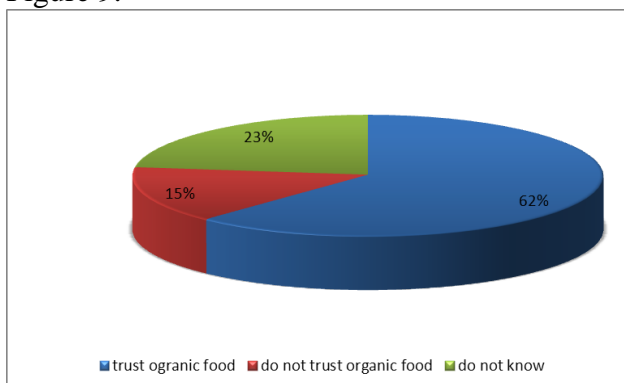


Figure 9. Confidence in organic food  
Source: Lacková et al., 2012

The main reason of the lack of trust is – according to the results of the survey – the uncertainty whether it really is the food produced in strictly controlled ecological farming in the case of the food offered on the Slovak market, or if it's just a "marketing trick" to increase the sales at the expense of the loss of trust of potential customers. This finding is very much in accord with Flash Eurobarometer 367

finding on lack of trust in information reliability of environmentally-friendly products.

Results of the consumers' opinion related to the *health benefits of organic food consumption* are following: from a total of 209 respondents, 87 % said that they *agree* with the idea that organic food is healthier than conventional food. 10 % of respondents said that they are not able to comment such issue and total of only 3 % of those who were questioned *do not agree* with the statement that organic food is healthier than conventional food.

In the terms of examining *the positive impact of organic farming on the environment* there have been reported very similar results as at the issue related to the health aspects of organic food consumption. A total of 85 % (i.e. 177 of 209) respondents said that they believe that the more natural way of organic food production actually contributes to protecting the environment, 10 % did not know and 5 % were disagreed. This opinion was mostly based on the assumption that the use of chemical sprays is strictly prohibited during organic farming which is in consent with Flash Eurobarometer 367 findings for Slovakia.

The price of organic food in Slovakia was seen as *relatively high* compared to conventional food. The reason, why organic food offered on the Slovak market is (in most cases) more expensive than conventional food, is that the organic farming system produces in a "small range", organic farmers produce mostly on small farmlands with more crop-species (in order to maintain the biodiversity), the crop requires more manual work, it is grown seasonally and without using chemicals, increasing the risk of organic degradation and shorter duration of the final products. Most preferred promotional tools suggested by consumers to support sales of organic products were *price discounts* and *in-store tastings*.

Flash Eurobarometer 367 results also suggest lowering the price gap between green and non-green products as money was seen the only reason why occasional shoppers of green products shop green products less than regular shoppers. We can conclude that the findings of lash Eurobarometer 367 for Slovakia are in consent with results of study focused

specifically on organic food products in Slovakia.

## 5 Conclusions

Environmentally relevant behavior and public support for environmental policies seems to be embedded in wider context of people's perceptions of humankind. In A. Fisher's research people were characterized as inherently selfish, and governed by habit and/or convenience. Thirdly, money was often regarded as the only factor that could change people's behavior. Contemporary society was characterized by strong focus on consumption even consumerism that have come from industrial era. In individualistic societies collaboration and collective action does not work. To achieve large scale behavioral change top-down approaches organized by government are promising. Specific characteristics of people in relation to energy and sustainable consumption are namely lack of knowledge and information for the correct response, and short-term thinking at the expense of the future, which was often mentioned as an explanation for unsustainable behavior. From Flash Eurobarometer 367 it is evident that more in-depth and standardized information need to be communicated on products' environmental impact to reach higher level of confidence among public, lowering the price gap between green and non-green products would enlarge the number of regular customers. Choice of green products in shops seems to be a problem as they are not easily available and hard to differentiate from other products, which suggests space for improvement in labeling and product information policies both in EU and Slovakia.

## References

Burke, C. (2007). *To buy or not to buy organic: what you need to know to choose the healthiest, safest, most earth-friendly food*. New York: Marlowe and co. 2007. 221 p. ISBN 978-156-924-268-1.

European Commission. *Communication on Integrated Product Policy*. (2003, June) Retrieved June 6, 2013, from <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52003DC0302:EN:NOT>

European Commission. *Environment for Europeans: An Economic Challenge for The Environment*. (2012, March). Retrieved June 7, 2013, from [http://ec.europa.eu/environment/news/efe/index\\_en.htm](http://ec.europa.eu/environment/news/efe/index_en.htm)

European Commission. Flash Eurobarometer 256. *Europeans' attitudes towards the issue of sustainable consumption and production*. (2009, April). Retrieved April 5, 2012 from [http://ec.europa.eu/public\\_opinion/flash/fl\\_256\\_en.pdf](http://ec.europa.eu/public_opinion/flash/fl_256_en.pdf)

European Commission. Flash Eurobarometer 367. *Attitudes of Europeans Towards Building Single Market For Green Products*. (2013, July). Retrieved August 1, 2013 [http://ec.europa.eu/public\\_opinion/flash/fl\\_367\\_en.pdf](http://ec.europa.eu/public_opinion/flash/fl_367_en.pdf)

European Commission. *Integrated Product Policy*. (2012, February). Retrieved June 6, 2013, from <http://ec.europa.eu/environment/ipp/>

European Commission. *Press Release. Environment: Helping companies and consumers navigate the green maze*. (2013, April) Retrieved August 10, 2013, from [http://europa.eu/rapid/press-release\\_IP-13-310\\_en.htm](http://europa.eu/rapid/press-release_IP-13-310_en.htm)

European Commission. *Single Market For Green Products Initiative*. (2013, July). Retrieved August 20, 2013, from <http://ec.europa.eu/environment/eussd/smgp/index.htm>

European Commission. *Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan*. (2008, July). Retrieved June 6, 2013, from <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008DC0397:EN:NOT>

European Commission. *Sustainable Development*. Retrieved June 7, 2013, from [http://ec.europa.eu/environment/eussd/escp\\_en.htm](http://ec.europa.eu/environment/eussd/escp_en.htm)

European Commission. *Životné prostredie pro Evropany: Spokojený život v mezích naší planety*. (2013, March).

Fisher, A. (2010). On the role of ideas of human nature in shaping attitudes towards environmental governance. *Human Ecology*, 38, 123-135.

Fisher, A. – Peters, V. – Vávra, J. – Neebe, M. – Megyesi, B. (2011). Energy use, climate change and folk psychology: Does sustainability have a chance? Results from a quantitative study in five European countries. *Global Environmental Change*, 21, 1025-1034.

Hall, A., Hübner, R. (2012). Commodity and Durability – a Contradictory Relationship? An Essay on Linking Extension of Product Life to a Producer – Consumer Responsibility. *Technology and Innovation For Sustainable Future: A Commodity Science Perspective*. Edited by R. Merli. Roma: IGWT ISBN 978-88-8286-269-5.

Lacková, A. – Karkalíková, M. – Gondárová, J. (2012). Marketing Communication Tools of Organic Food on



Slovak Market. *Technology and Innovation For Sustainable Future: A Commodity Science Perspective*. Edited by R. Merli. Roma: IGWT ISBN 978-88-8286-269-5.

Lorenzoni, I. – Nicholson-Cole, S. – Whitmarsh, L. (2007). Barriers perceived to engaging with climate change among the UK public and their policy implications. *Global Environmental Change*, 17, 445 – 459.

Vogel, G. (2012). The Relationship Between Technology, Innovation and Environmental Management: Ways To a Sustainable Consumption Behaviour and a Sustainable Economy. *Technology and Innovation For Sustainable Future: A Commodity Science Perspective*. Edited by R. Merli. Roma: IGWT ISBN 978-88-8286-269-5.

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Author works as assistant professor at University of Economics, Faculty of Commerce in Bratislava, Slovakia. Prior to her academic carrier she has achieved valuable experience in business as marketing manager in Whirlpool Slovakia and innovation team member during European Innovation Initiative in Whirlpool Europe. At University she has been actively involved in research focused on product management and innovation. She teaches Commodity science and Product strategies.