Plastics and its waste: trends and attitudes

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Figure 1: Plastics. Source: https://journals.openedition.org/

Introduction

Plastics have gained a significant attention recently due to increasing pollution. Currently Europe produces 29.1 mill. t. of plastic waste and only 32.5% of plastic collected is recycled (PlasticsEurope, 2019). According Eurostat in 2017 16.76 million tones of packaging plastic waste was generated in ES.

Not only production, but also people's attitudes and behaviour regarding consumption of plastic goods and afterward proper plastic waste management are of importance. As stated in European Strategy for Plastics in a Circular Economy (2018) consumers play an important role in the transition to the circular economy regarding plastics. According it by 2030 "citizens are aware of the need to avoid waste and make choices accordingly". Therefore, research aims to analyse trends in plastic waste generation and examine overall consumer attitudes and knowledge regarding plastics, its consumption and waste management behaviour in Lithuania.

Material and methods

In order to study trends in the generation and management of plastics and plastic packaging waste in Lithuania and the EU over the period 2004-2016 (17), data were collected from the Eurostat database (Statistical Office of the European Communities). Trends in the total amount (tonnes) of plastics waste and plastic packaging waste generated (kg / capita) were analyzed.

A questionnaire was developed to examine and analyze people's awareness and perceptions of plastics, its products and health effects. The demographic and social factors that may influence the distribution of respondents' answers were also included. Questionnaire was posted on the survey website (www.apklausa.lt), thus the respondents' answers were collected electronically by distributing the questionnaire on social networks and by e-mail. Data were collected between February and April 2015. In total 184 answers were received.

Possible influence of socio-demographic factors was analyzed applying Chi square test.

Table 1: Factors influencing awareness about bisphenol A (bold values p<0.05)

Possible factor	χ^2	p
Gender	1.869	0.172
Age	**23.550**	**0.001**
Education	**9.969**	**0.041**
Income	0.899	0.343
Social status	3.970	0.410
Urbanization level	8.610	0.072
Children up to 6yr	**17.259**	**0.000**

Results

Results show increasing plastics waste generation since 2004 in Lithuania and in 2016 amounting to 88.74 thous. t. Plastic packaging waste generation was rather stable showing some increase, except 2009 decline due to the financial crisis. In 2017 packaging plastic waste amounted to 68.74 thous. t. in Lithuania. To compare to EU28 (32.7kg/cap), packaging waste generation per capita in Lithuania is still lower (24.3kg/cap). This suggest possible further increase, but also opens possibilities with increasing economy to reduce or at least stabilize per capita plastic packaging waste generation.

Respondents indicated that on average they use 4-6 plastic bags (31.5%) weekly, and if they would be taxed, most respondents would buy them only in urgent cases (61.4%). More than half of the respondents (51.6%) would be willing to pay 1 euro cent for one single use plastic bag (Fig.2).

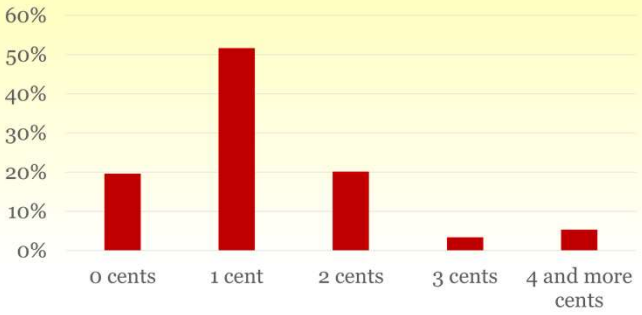

Figure 2: WTP for single use plastic bag

More than half of respondents were not familiar with plastic packaging recycling codes which are safe for contact with food; also, with bisphenol A harmful effect on human health. Those aware more often were older, with higher education and having children up to 6 years old (Table 1).

According to the respondents, there is lack of information about plastic sorting (53,8%) and its risk to human health and the environment (48,4%). Therefore, the public should be provided with more information about the potential harm of plastic and plastics waste sorting and management.

Conclusions

Per capita plastic packaging waste is still lower in Lithuania than EU on average and increase in plastic packaging could be expected if special policy measures are not applied. Possibilities to stabilize or reduce plastic packaging waste, hence, lies not only on the production side, but also on the consumers. Their attitudes and behaviour might be of importance. However, results reveal that consumers lack knowledge of plastics and their impacts to health and environment. Also waste sorting habits could be enhanced. Economic measures for the use of single use plastic bags could be an option as results of survey suggests, not only for multiple-use plastic shopping bags. Different socio-demographic factors might be of importance then planning information and other measures to reduce plastic waste generation.