

Food Waste and Effective Approach to Reducing it in Slovak Households

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Abstract

As a result of the more consumer way of life in today's society, various new global problems are emerging, one of which is the problem of food waste. We chose the topic because food is an integral part of our lives. We often receive them automatically and many times we treat them without further thought. This issue does not meet the conditions of sustainability today, due to food waste on all levels, ranging from large-scale production to households. It is households that account for a third of the world's food waste. The main aim of the submitted article is to evaluate the current situation, to analyse the issue and the reasons for the emergence of food waste in households, and to formulate proposals aimed at improving the situation. At the beginning of our research, it was necessary to get an overview of the current situation the issue. We have defined the basic concepts as well as the views of the authors who deal with the issue in their scientific and professional publications. A substantial part of the article consists of the results of the work, where it was necessary to evaluate the answers of respondents from the questionnaire survey. The results of the work are divided into loading households with food waste, the difference between the terms "minimum durability" and "Consume by", a waste of food during the holidays as well as a look at respondents' perceptions of food waste. In the end, we evaluated the achieved results and submitted suggestions for improved food waste issues.

Keywords: food waste, global problem, Slovak households, today's society

JEL classification: Q530, Q560, Q590

1. Introduction

In today's world, food waste is an increasingly addressed issue because there are two extremes in today's globalized world. The first is many people who suffer from hunger and have very limited resources. The second extreme is the globalized market, where consumers are under great pressure on producers. As a result, the food chain has expanded, resulting in a surplus of goods that are no longer used and usually end up in the trash. Food waste is also a growing problem in today's world. A significant part of the population suffers from poverty, hunger, and malnutrition, but as a result, more than one-third of the food produced is discarded or degraded. Food disposal is a big problem today, but it has only come to more attention in recent years. In today's climate change situation, it is necessary to draw more attention to this issue and try to lead people to value what they have more and not waste resources unnecessarily.

2. Literature Review

To understand the work, we define the basic concepts at the beginning, which will facilitate orientation in the text and in the topic itself. The first chapter is therefore devoted to clarifying the terms and definitions that are inseparable from the topic of food waste. Every year, one-third of food produced for human consumption is unused and lost during the food chain (Kapsdorferová et al., 2020).

Around the world, more than enough food is produced to feed the global population—but as many as 811 million people still go hungry. After steadily declining for a decade, world hunger is on the rise, affecting 9.9 percent of people globally. From 2019 to 2020, the number of undernourished people grew by as many as 161 million, a crisis driven largely by conflict, climate change, and the COVID-19 pandemic. (United Nation, 2021)

Food is wasted from the primary activity, such as agriculture, to the last link in the chain, which is the final consumer. This is also the main reason why we are increasingly confronted with the concept of food waste. There is still no uniform definition of this term. (FAO, 2011)

In 2012, the European Parliament recognized the cessation of food waste and defined the term as "the total amount of food products that are discarded from the food chain for economic or aesthetic reasons". (Schneider, 2012)

An important step in understanding the issue of food waste is to recognize the concepts of food loss and food waste, which are often confused.

By food losses, we mean all foods that are discarded, burned, or otherwise disposed of in the food chain as part of harvesting/slaughter/catch due to quantity reduction or unsatisfactory quality. We do not include secondary use as seed or feed here. These losses are referred to as the Fatty Liver Index (FLI). (Gustavsson, 2020)

By food waste we mean food that is discarded due to reduced quality at the discretion of retailers, food service providers, or consumers. This waste is generated in many ways:

- fresh products do not meet the standards of shape, size, color. These products are removed from the supply chain during sorting.
- Foods approaching the "minimum shelf life" date are being thrown away by both retailers and consumers due to declining quality.
- A large amount of remaining edible food is discarded from households or catering establishments as uneaten leftovers.

This type of waste is referred to as the Food Waste Index (FWI). (Gustavsson, 2020)

In 2015, all UN member states committed themselves to seventeen sustainable development goals, which will be met by 2030 at the latest, i.e., after fifteen years. All EU Member States are also members of the UN, so the EU is obliged to meet these goals. There are several goals that go to food waste. From the second goal dealing with zero hunger translation (Zero hunger), through the eleventh climate goal (Climate action), to the twelfth goal on a sustainable pattern of responsible consumption and production. (United Nations, 2015).

Food waste may be reduced by changing consumer reactions towards waste, increasing awareness of poverty and hunger, and highlighting the moral implications of waste, for example by using guilt (Ratinger et al., 2016; Szafrńska et al., 2020). Research on determining the factors affecting the level of food waste has been conducted for many years. The investigations most often focus on determining the influence of demographic and economic factors: income (Graham-Rowe et al., 2014; Aschemann-Witzel et al., 2017; McCarthy and Liu, 2017; Macková et al., 2019), consumer's age (Quested et al., 2011), education (Cox and Downing, 2007) and number of persons in the household. (Baker et al., 2009; Jørisen et al., 2015).

3. Methodology or Materials and Methods

The main goal of the paper is to evaluate the current situation and the reasons for the generation of food waste in households and to formulate proposals aimed at improving the situation.

In order to successfully fulfil the main goal, it is important to define the following partial goals: a study of scientific publications, decrees, and provisions of ministries as well as the study of domestic and foreign literature in order to better understand food waste, preparation of questionnaires aimed at obtaining information from consumers data collection took place online through an electronic questionnaire developed in Google Forms, processing and evaluation of the questionnaire survey, formulation of proposals and recommendations for reducing food waste and drawing conclusions.

The main method we used was the questionnaire survey method. The survey was conducted using a questionnaire compiled in Google Forms (Google Forms). The questionnaire survey focused on consumer households on shopping habits and the way food waste is managed in the household. The questionnaire survey was conducted over a period of three weeks, from 14 December 2020 to 04 January 2021. Data collection took place online via social networks (Instagram and Facebook) and also using the Twitch streaming platform. In addition, respondents were contacted by email as well as by phone.

The questionnaire consisted of four parts: the characteristics of the sample examined, the difference between the terms "minimum durability" and "use by", food waste management, and food waste during the holidays.

4. Results and Discussions

4.1 Characteristics of the examined file

The structure of the respondents was as follows: out of 85 respondents, 59 were men, which represents 69%, and 26 women, which makes up 31%.

In the second question of the questionnaire survey, we found out the age composition of the respondents. The majority of respondents belonged to the age category of 20-35 years with a share of 65%, which represents 55 respondents, another age category was the age category up to 20 years, which is 18% and that represents 15 respondents. Only 8 respondents belonged to the category of 36-49 years, which represents 9%. A smaller number of respondents came from the age category of 50-65 years, which consists of 5 respondents, which represents 6%, and we received the least answers from the age category of 60 or more years, where we had 2 respondents, which represents 2%.

More than half, up to 53 respondents have a complete secondary general / vocational education with a high school diploma, which represents 62%. The second-largest share had a university degree II. degree - master's, 10 respondents, which represents 12%. Only 6 respondents had a university degree III. degree - doctoral, which represents 7%, and 6, which represents 7%, the respondents had a university degree I. - bachelor. The same number of respondents had a secondary vocational education without a GCSE with an apprenticeship certificate (5 respondents, 6%) and there were also respondents with a different type of education (5 respondents, 6%).

When asked how many members live in the household, respondents answered differently. The most frequent respondents live in a 4-member household, there are 24 respondents, which represents 28%, followed by a three-member household, where 23 respondents agreed, which represents 27%. As many as 12 respondents live in a 5-member household, which represents 14%, followed by 11 respondents living in a two-member household, which makes up 13% of the answers. 9 respondents live in a household of more than 5 members, which represents 11%

and the smallest share of answers is represented by respondents living alone, this is how 6 respondents answered, which is only 7% of answers.

In the next question, we were interested in where the respondents came from. The largest respondents came from the city, this option was chosen by 51 respondents, which represents 60%, which means that the remaining 34 respondents, which represents 40% come from the countryside.

4.2 Difference between "minimum shelf life" and "use by"

As many as 71 respondents try to prevent food waste, which represents 83%. Figure 1 shows the respondents' answers to the question of how they try to prevent the generation of food waste.

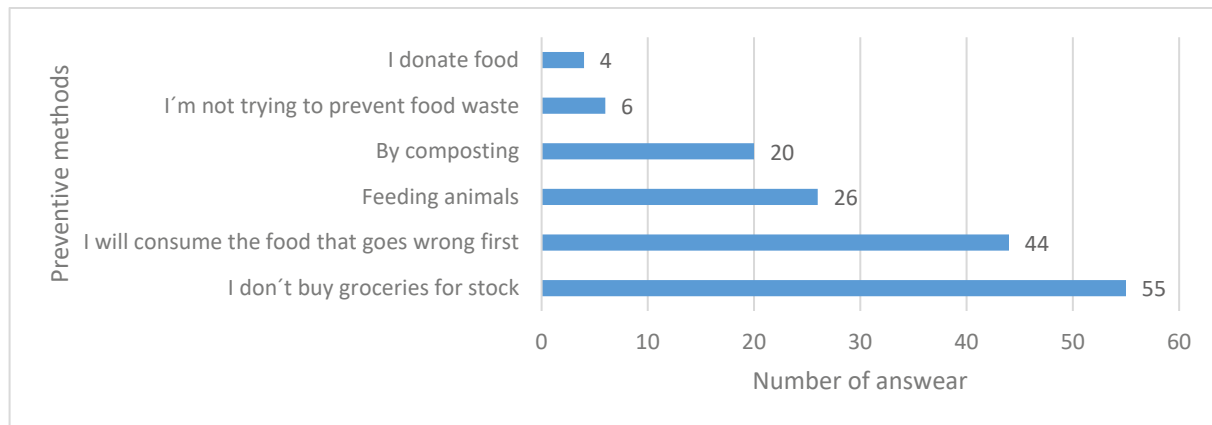


Figure 1: Respondents' answers

Source: own processing

Surprisingly, only 69% of respondents think they know the difference between "minimum durability" and "use by". Out of a total of 59 respondents who think they know the difference between 'minimum durability' and 'use by', only 42 respondents indicated the right options, representing 71%.

In the next question, we found out whether the respondents consume food after the minimum shelf life, most respondents decide whether the food is not spoiled, does not have an unusual color/odor, which means that they do not place much emphasis on the minimum shelf life, 41 respondents answered which represents up to 70%. 44% of respondents do not consume such food after the "use by" date and this is a big difference from the previous question, but most respondents again agreed on the answer, depending on whether the food is spoiled or does not have an unusual color/smell in the number of 28 respondents, which represents 47%

4.3 Food waste management

As many as 39 respondents said they threw bread/pastries most often. The other most frequently thrown out foods were the remnants of cooked food, this option was chosen by 26 respondents, followed by greens by 19 respondents, 15 respondents said that they threw fruit most often. 15 respondents said they did not throw away food at all. This is followed by dairy products, which are most often thrown away by 12 respondents, and the least thrown out food is meat, on which

only 7 respondents agreed. Only 3 of respondents said they threw away other food. In figure 2 we see the reasons why the respondents decided to throw away the food.

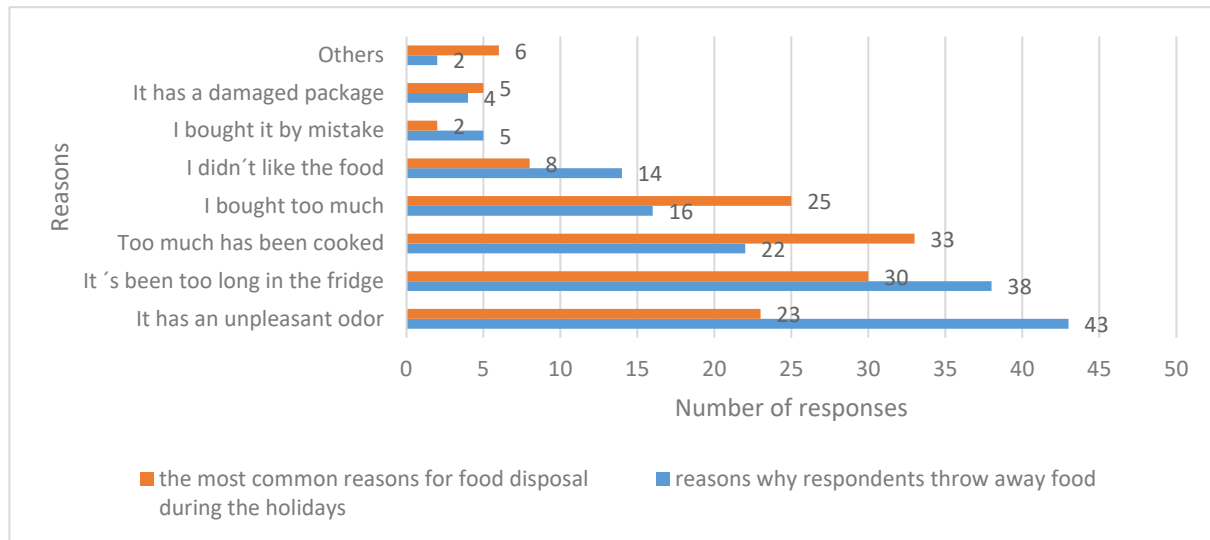


Figure 2: Reasons why the respondents decided to throw away the food

Source: own processing

4.4 Food waste during the holidays

According to the survey, 59% of respondents think that they do not waste more food during the holidays, while the same percentage of respondents perceive food waste as a big problem. The reasons why respondents do not throw away food during the holidays are shown in figure 3. Based on the survey, we also found that 76% of respondents spend more on food during the holidays.

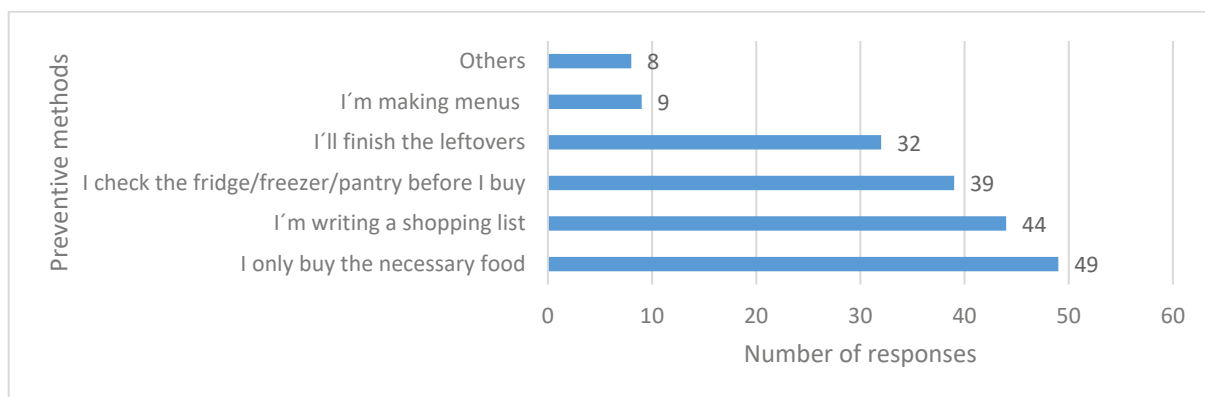


Figure 3: The reasons why respondents do not throw away food during the holidays

Source: own processing

5. Conclusions and Recommendations

In this paper, we addressed the topic of food waste in households. Using a questionnaire survey, we found out the attitudes of respondents to this issue. The main goal was to evaluate the current situation and the reasons for the generation of food waste in households and to formulate proposals aimed at improving the situation.

Thanks to a questionnaire survey of 85 respondents, we found that not all respondents behave responsibly in this area, this is also due to ignorance of the terms "minimum durability" and "consume until". In addition, we have found that there is more food waste during the holidays. During the holidays, respondents spend more money on food and at the same time waste more of it.

Based on the survey, we can assess that respondents would be most motivated in the area of food waste, saving money, which was agreed by 38% of respondents, 33% of responses from respondents had the opportunity that this is the right thing to do. Uncommon responses include environmental concerns, where 17% of respondents agreed and 10% of respondents are motivated to save time. Only 2% of respondents admitted that they would not be motivated by anything.

The issue of food waste is discussed at the global policy level. However, there is still a shortage of research and studies in the Slovak Republic and a comprehensive methodology for collecting data on food waste is lacking.

People throw-away food automatically and do not think about the consequences. They lack an awareness of what it all entails. Individuals should be more educated about this issue and aware of the impact of food waste on the world (economic, social and environmental). The solution could be better planning of food purchases - mobil apps can help (like: GoGreen, Too Good To Go, Empty my Fridge, Food Waste Tracker, Foodkeeper, Foodchain, Food Save and many others apps), greater awareness of the date of use and the date of minimum durability, or knowledge of how many people in the world suffer from hunger and malnutrition. The process of improving the overall situation of food waste will be long-term. But the most important thing is that each person starts right and especially from himself. It is necessary to keep in mind the model 5R (reduce, reuse, recycle, refuse, root).

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