

# CONSUMERS' AWARENESS AND BEHAVIOUR ON FOOD WASTE PREVENTION

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## Abstract

The issue of food waste nowadays has assumed such dimensions to be considered a priority global problem, which concerns all links in the supply chain, from the agricultural field to the consumer's table. Global food losses throughout the supply chain, sum up approximately one third of all food produced for human consumption, which corresponds to approximately 1.3 billion tones per year (Bräutigam et al., 2014; Buzby and Hyman, 2012; Gustavsson et al., 2011). In industrialised countries with high income, most food waste and especially its avoidable fraction, originates from the stage of consumption, particularly at household level (Koivupuro, 2012), due to the overabundance in food production, the relative affluence of the average household and the prevailing consumer behaviour models. Although the most significant contributors to food waste are the households, there is still limited evidence regarding the determinants of consumers' food waste behaviour.

## Introduction

Given that food is the most costly in resources and energy group of consumer products, the prevention of food waste could make a significant contribution to preserve scarce natural resources and reduce environmental impact during its production, transportation and management stages. The production of surplus food that is not consumed has high environmental costs, high consumption of energy and natural resources (soil, water, fossil fuels), and significant emissions into the atmosphere. It is estimated that about 89 million tons of food that end up in waste each year in the EU-27 produce 170 million tons of carbon dioxide equivalent, i.e. 1.9 tons of CO<sub>2</sub>-eq per ton of wasted food. This amount relates to the whole food supply chain, other than the agricultural production and corresponds to 179 kg / year per capita, while only at the household level it amounts to 76 kg/yr.ca (Bräutigam et al., 2014; Monier et al., 2010). The first study on food waste generation by Greek households was carried out in 2013 and indicated that, on average, Greeks generate 98.9 kg/y, of which approximately 30 kg per person are avoidable food waste (Abeliotis et al., 2015; 2016). Moreover, wasting food has a negative societal impact as it contributes to the shortage of food and, as such, to an increased challenge of feeding the increasing world's population. Approximately 795 million people worldwide (one in nine) are not adequately fed, according to recent estimates (FAO, IFAD and WFP, 2015). The current market levels and food wastage are not sustainable (Morgan, 2009); thus the behavioural change of consumers and businesses, the abolition of traditional attitudes and habits, the review of principles and the redefinition of attitudes in terms of waste production are imperative.

The main purpose of this study is to develop an environmental quantification methodology of food waste prevention at the household level, based on Ajzen's Theory of Planned Behaviour (TPB), in order to record people's beliefs about reducing household food waste and investigate attitudes, motivation and behaviour of individuals adopting food waste prevention practices. The TPB is considered the most powerful and well-structured theory of social psychology on the prediction of human behaviour. The combination of strong empirical data and its wide application, contributed to its establishment as the most popular theory regarding the interpretation and prediction of the behaviour of individuals. It is nowadays the dominant theoretical approach to understanding the factors that influence the environment-related actions of the individual, based on the intention to conduct on various environmental issues (Nisbet and Gick, 2008). The TPB maintains that intention is the only direct antecedent of behaviour, and that intention is affected by attitude, subjective norms and perceived behavioural control, which are the main constructs of the theory. In order to explore all key factors that influence engagement in waste prevention activities, we examine the effect of psycho-social factors and socio-demographic characteristics on self-reported food waste behaviour.

Understanding the psychological and situational variables which affect customers' food waste behaviour, could help the development of strategies in the direction of food waste reduction, as there is an increasing international policy interest towards ways to decrease food waste. There has been little peer-reviewed research that focuses on identifying key motivations to reduce household food waste. The study of behavioural aspects towards waste prevention by households has appeared recently in the literature (Abeliotis et al., 2016).

## Methodology of the study

For the purposes of this study a questionnaire was constructed based on an extensive literature review of previous applications of the TPB; the questionnaire was further refined based on data and information gained from pilot

interviews in a sample of 20 people. Formative (pilot) research, preceding the construction of the final questionnaire is required by Ajzen (1991), in order to verify that the questionnaire is appropriate for the behaviour and population under investigation. A five-point rating scale (Likert-type) was used to measure the typical variables of TPB- intentions, attitudes, subjective norm and perceived behaviour control, which consist the conceptual cores. A content analysis found several relevant additional variables which grouped respondents' beliefs about consequences, normative referents, and control factors related to reducing food waste. Figure 1 shows the conceptual model we have constructed in the framework of the research, which include ten additional variables and the socio-demographic characteristics of the sample.

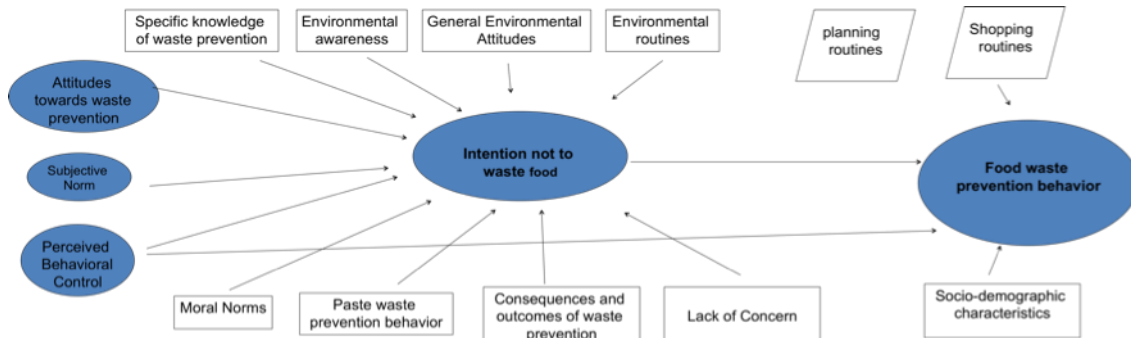


Figure 1: Food waste conceptual model

The survey was targeted to Greek between the age of 18 and 80 who are responsible to some extent for cooking or food purchases in their household. This condition was further ensured by placing two relevant screening questions in the last section of the questionnaire. The research took place from April until June 2017. A ten pages questionnaire was developed in English, translated into Greek, and distributed to 900 individuals inviting them to participate with a front page which explained the purpose of the study. Of these 655 have fully completed the survey until now, meaning a response rate of 72.8%. Initial results are presented from processing the first 255 primary data through the statistical analysis software SPSS 23.

## Results and discussion

The questionnaire was focused on selfreported behaviour and attitudes regarding food waste and the efforts taken, if any, to reduce it.

A vast majority of respondents (57%) know that 1/3 of the quantity off food produced worldwide goes away and (65.5%) that in developed countries, most of the food waste is produced by households (figure 2), but only a minority believe that their own household does the same thing. As it seems in figure 3, just 11% of people estimate that they waste 16% to 30% of their food while 7% say they waste 31% to 50% and 3.5% say they waste more than 50%.

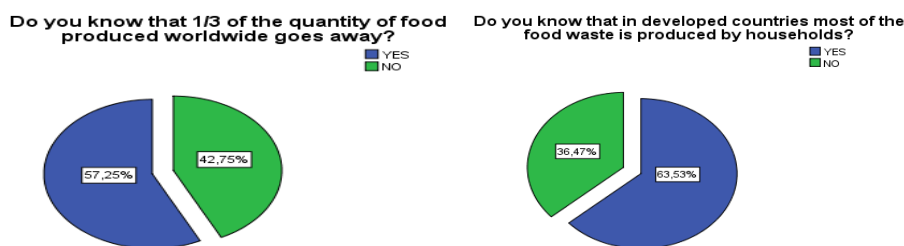


Figure 2: Respondents' knowledge about food waste

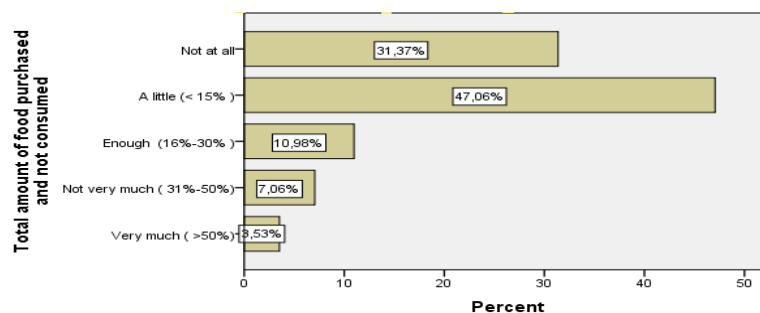


Figure 3: Respondents' estimation about the food waste that their household generate

Nine out of ten respondents (92%) have the intention not to throw any food at all, as shows figure 4. However, only a minority of respondents (31%) of the respondents always make efforts to reduce the amount of household waste that they generate.

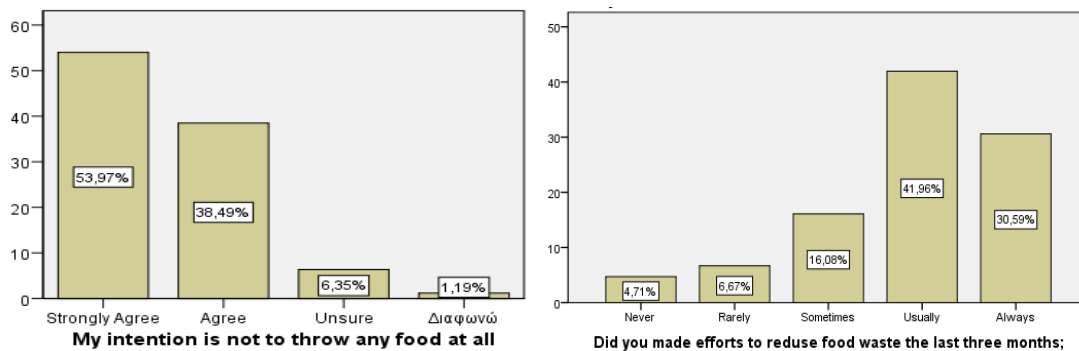


Figure 4: Respondents' intention and efforts to reduce food waste

Initial results confirm that there is a paradox between people's wants and their acts. If this paradox were to be addressed in order to change people's behavior, it would be necessary first to raise awareness towards the issue of food waste because most people do not realize that they do waste a lot or they consider their waste as being unavoidable.

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