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MASTER THESIS

PSICHOLOGINIŲ VEIKSNIŲ ĮTAKA KETINIMUI MAŽINTI DARŽOVIŲ IR VAISIŲ ATLIEKŲ KIEKĮ LIETUVOJE	INFLUENCE OF PSYCHOLOGICAL FACTORS ON THE INTENTION TO REDUCE VEGETABLE AND FRUIT WASTE IN LITHUANIA

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INTRODUCTION

In addition to being a basic human need, food is also an important component of our cultural, environmental, and health contexts. But the problem of food waste on a global scale is extremely difficult. An astounding 931 million metric tons of food are wasted daily, according to Forbes et al. (2021), raising worries about the depletion of natural resources, inefficiencies in the economy, and environmental degradation. Food waste is defined by Stenmarck et al. (2016) as situations in which consumable goods are thrown away without being eaten. This includes instances where retailers discard produce that seems to be faulty or where customers throw away leftovers. According to Quested et al. (2013), a considerable amount of food is wasted at the consumer level in wealthy societies; the cost of this waste amounts to a considerable amount of weekly household expenditure. This suggests a significant opportunity to save money and resources. Due to their high perishability, fruits and vegetables are the food types that are wasted the most, which brings attention to a specific area of concern within the larger problem of food waste.

The effects of food waste are enormous globally. According to reports from the Food and Agriculture Organization (FAO), more than one-third of the world's food supply is lost or wasted each year (FAO, 2011). According to De Laurentiis et al. (2018), fruits and vegetables account for over half of food waste in member states of the European Union, which makes them especially concerning. Fruit and vegetable waste has a significant negative influence on the ecosystem. Food waste breaks down anaerobically in landfills, releasing methane, a powerful greenhouse gas that accelerates global warming (Salemdeeb et al., 2017). Discarded fruits and vegetables also squander the energy, water, and land used during cultivation. Interestingly, the global network of food waste is closely tied to social disparities worldwide, resulting in food scarcity as a consequence. The societal and fiscal consequences are not without lasting effects. The environment is headed towards a bleak and scorched future. Academics such as Forbes et al. (2021), Bancal & Ray (2022), Kummu et al. (2012), and Parfitt et al. (2010) highlight the importance of comprehending the psychological factors influencing food waste behaviours in order to develop successful interventions that target this widespread issue. The amount of food wasted can be decreased by making improvements to the ways that food is bought, prepared, and eaten. To guarantee that food is fully utilized and not wasted, people might, for example, plan their shopping more carefully by purchasing only the essential goods and using more efficient cooking and eating behaviours (Stancu et al., 2016).

The complex links between subjective norms, personal norms, attitudes, perceived behaviour control, additional psychological factors and people's aspirations to reduce vegetable and fruit waste in Lithuania are examined in this master's thesis. This research aims to investigate the

complex relationships between these psychological factors and how taken as a whole, they impact intentions to decrease vegetable and fruit waste. To improve our comprehension of the variables impacting the decrease of vegetable and fruit waste in homes, this research will explore the relationship between personal norms and a range of psychological and social factors. It will specifically look into the functions of anticipated guilt, perceived behavioural control, subjective norms, awareness of consequences, ascription of responsibility and personal norms. This multimodal approach aims to disentangle the complex web of factors that underpin food waste behaviours in Lithuania. This will provide valuable background information for the ongoing conversation about promoting environmentally conscious consumer behaviour and creating targeted interventions to support sustainable food consumption practices.

The problem of the thesis – how psychological factors influence Lithuanian consumers' intentions to reduce vegetable and fruit waste?

The aim of the thesis – from theoretical and empirical aspects to analyse psychological factors on the intention to reduce vegetable and fruit waste in Lithuania.

Objectives:

1. Review existing literature and theoretical frameworks concerning psychological factors related to food waste behaviour, with a focus on factors influencing the intention to reduce vegetable and fruit waste in Lithuania.

2. Identify and evaluate the key psychological determinants that impact the intention to reduce vegetable and fruit waste, particularly in relation to planning purchasing, cooking, and consumption practices in Lithuania.

3. Develop a robust quantitative research methodology to collect data from individuals in Lithuania, focusing on understanding the psychological factors that influence strategies for planning purchases, cooking, and consumption to reduce vegetable and fruit waste.

4. Analyse collected quantitative data using appropriate statistical techniques to ascertain the relationships between psychological factors and the intention to reduce vegetable and fruit waste through improved purchasing, cooking, and consumption strategies.

5. Interpret quantitative findings to discern the relative significance and influence of psychological factors on the intention to reduce vegetable and fruit waste through better purchasing, cooking, and consumption practices.

6. Draw conclusions based on empirical evidence, highlighting implications for promoting effective strategies to reduce vegetable and fruit waste in Lithuania, and suggesting avenues for further research or intervention strategies aimed at minimizing food waste.

1.INFLUENCE OF PSYCHOLOGICAL FACTORS ON THE INTENTION TO REDUCE VEGETABLE AND FRUIT WASTE IN LITHUANIA THEORETICAL ASPECTS

1.1 Intention to reduce vegetable and fruit waste

Intention in psychology refers to a person's commitment or purpose to carry out a particular conduct (Ajzen, 1991). This is especially true in the field of environmental behaviour research. Intention to refrain are the actions you take aimed at reducing food waste in your home, particularly regards vegetable and fruit wastage. These practices often involve meal planning, time-efficient cooking and eating in a way that eliminates food waste. These planning and consumption patterns can be a focus for humans to align their habits with waste reduction goals (Stancu et al., 2016). Examining intentions in waste reduction is important because of the wider influence these actions have on environmental sustainability. Cutting waste promotes more sustainable consumption patterns and lessens the needless demand on natural resources. It also helps to minimize the environmental impact of waste management (Herrero et al., 2023). Additionally, research indicates that situational circumstances, social impact, and self-efficacy are important determinants of intents and behaviours linked to reducing food waste (Pandey et al., 2023). By enhancing their grocery shopping, meal planning, and preparation techniques, these factors have an impact on how people handle their food, especially fruits and vegetables. The main objectives of trash reduction and environmental conservation can be furthered by designing interventions that are more effectively tailored to the elements that impact intentions to decrease vegetable and fruit waste. The literature has identified a number of important variables as major determinants of the aim to decrease fruit and vegetable waste in Lithuania. These consist of the attitude, personal norms, subjective norms, perceived behavioural control and anticipated quilt.

1.2 Psychological factors that influence intention to reduce vegetable and fruit waste

1.2.1 Attitude

Beliefs about sustainability and food waste have a big impact on waste reduction practices. According to cognitive psychology, attitude has a major role in determining how people behave

(Bredahl, 2001). These attitudes capture a person's opinions or sentiments regarding waste management procedures and represent their inclinations to behave in particular ways with regard to environmental preservation. According to Ajzen's (1991) Theory of Planned Behaviour, attitudes toward particular behaviours, subjective standards, and perceived behavioural control all work together to generate behavioural intentions, which in turn affect actual behaviour. When it comes to reducing waste, having a good attitude toward sustainability and ethical waste management can motivate people to take actions that reduce waste.

Attitudes are people's assessments of the actions they have taken; these assessments are frequently the result of internal psychological and cognitive processes (Soorani & Ahmadvand, 2019). Although Armitage and Conner's (2001) meta-analysis focuses on the Theory of Planned Behaviour (TPB), it also explores the relationship between behavioural intentions and attitudes, highlighting the importance of personal beliefs in shaping people's decisions and actions regarding reducing food waste. Furthermore, Ahmed et al.'s (2021) survey on food waste perceptions highlights the significant influence of consumer information and awareness of consequences on private views. In addition, Purwanto et al. (2023) show that generational cohorts like Generation X are prime examples of how social and cultural factors shape attitudes.

Recognizing the influence of generational attitudes on individual behaviours and intentions allows for customized treatments for a variety of demographic groups. According to Stancu et al. (2016), people who had a more positive outlook on food waste in their personal lives were also more driven to cut back on their food waste. According to research by Michal et al. (2024), people who have gone through times of food scarcity—whether it be personally or in their families—are more prone to have unfavourable opinions about food waste in their daily lives. These people might have a greater understanding of the worth of food and the repercussions of wasteful conduct. In a similar vein, Hamerman et al. (2017) found that those who care more about the environment also typically have good opinions about food waste. Social standards are often reinforced by attitudes, which in turn encourage behaviours that conform to those norms. Individual perspectives that uphold this standard can encourage the broad adoption of waste reduction techniques if sustainability is valued in the community (Cialdini, 2003).

Similar to findings from previous studies that highlight attitude as a key determinant in sustainable consumption patterns, Leko et al. (2014) emphasize the critical role of personal attitudes in driving green food purchasing decisions among students, claiming that health consciousness, environmental protection, and local food origins significantly shape consumer behaviour. The findings of Testa et al. (2018) indicate that perceived behavioural control and

health consciousness have a beneficial impact on attitudes regarding purchasing organic products. By examining the relationship between religious beliefs and efforts to reduce food waste, Elhoushy and Jang (2020) offer a distinctive perspective. The findings show that religion promotes a decrease in food waste. Dinc-Cavlak and Özdemır (2022) employ the Theory of Planned Behaviour to examine recurring behaviours related to buying organic food, revealing the cognitive factors that motivate regular activities that promote environmental consciousness. As noted by Parfitt et al. (2010), people's opinions about whether food waste is acceptable can be influenced by cultural norms and expectations. Public perceptions are mostly shaped by cultural norms that are ingrained in lifestyle choices (Manan, 2016). The environmental impact of food waste is highlighted in articles like those by Forbes et al. (2021), which also highlight the role that attitudes have in encouraging wasteful behaviour. The public's negative attitudes regarding minimizing food waste can often be traced back to a variety of negative emotions, which in turn influence people's beliefs and behaviours. Graham-Rowe et al. (2014) state that people's attitudes toward and interactions with programs aimed at reducing food waste may be significantly influenced by sentiments of guilt, resentment, irritation, embarrassment, or regret. People might feel guilty, for instance, if they think about how they individually contribute to food waste (Attiq et al., 2021). The research findings across various studies consistently emphasize the critical role of attitudes, cultural norms, and emotions in shaping behaviours related to reducing food waste, aligning closely with the topic of psychological factors influencing vegetable and fruit waste reduction in Lithuania.

According to a study by T'ing et al. (2021), Malaysians' behavioural intentions to reduce food waste are significantly influenced by their attitude about doing so. They come to the conclusion that supermarkets and hypermarkets have a big influence on how consumers feel about reducing food waste. They should also keep an eye on food that is about to expire and run promotions to get rid of the stock because there are always customers willing to pay less for goods.

The research by Stenmarck et al. (2016) looks at how the public's perception of food waste is affected by media coverage. Media outlets can alter public perceptions and set societal norms, which aids in the criticism of wasteful behaviour. Teoh et al. (2021) draw attention to how social media may alter how people act and how information is shared. Social media platforms are a useful tool for spreading knowledge about environmental impact, responsible consumption, and the consequences of food waste.

Sung et al. (2019) found that while intention and subjective norm strongly influence frequency of upcycling, UK Makers' attitudes toward upcycling exert a strong influence on their intention to engage in upcycling. Publications such as Kim and Hall (2020b) investigate the social aspects of practices aimed at minimizing food waste. Public opinion can be influenced by the common

values and social networks of communities. In a 2013 investigation, Quested et al. was shown that respondents' attitudes were associated with a greater likelihood of putting waste reduction techniques into practice, like meal planning in advance and using leftovers. Findings of the 2021 study by Ahmed et al. highlight the significant impact of contextual factors, including intentions, financial attitudes, planning practices, excess food, social contacts, and even cultural holidays like Ramadan, on food waste behaviour. The study of Žičkienė et al. (2020) supports the notion that raising public awareness and attitudes about the consequences of food waste can encourage more responsible food management practices, potentially reducing vegetable waste in households. In conclusion, encouraging people to adopt practices that reduce food waste requires them to have a good attitude toward sustainability and ethical waste management. Since attitudes have a major role in determining behavioural intentions and behaviours related to food waste, raising public awareness and highlighting the significance of these attitudes can result in notable changes in waste reduction strategies.

1.2.2 Subjective norms

Subjective norms, or social norms, are people's interpretations of the expectations and standards that are prevalent in their social surroundings concerning specific conduct (Ajzen, 1991). Social norms are important in influencing intentions toward waste reduction behaviours when it comes to minimizing vegetable and fruit waste. People who experience social pressure or expectations to reduce waste are more likely to be intentional about reducing waste and prioritise sustainability.

Subjective norms have a big impact on people's intents to cut down on the wastage of fruits and vegetables because they make people align their actions with what they think their social circle should be doing (Pelau et al., 2020) The desire to be accepted by others and to stay out of trouble is what motivates this alignment. People adhere to social standards because they are essential for maintaining cooperative relationships and organizing group action (Gross & Vostroknutov, 2022). Furthermore, following norms frequently entails controlling social and self-image issues as well as internalizing society expectations. This study highlights the ways in which awareness of other people's actions and perceptions of these behaviours could create ethical standards toward more sustainable habits, supporting the idea that social norms impact intentions in the field of decreasing food waste. Likewise, social norm treatments have greater effect when people's personal standards are less established, according to research by De Groot et al. (2021). People are less influenced by interventions based on societal norms when they already have strong intentions about pro-environmental behaviour.

The intricate interplay between society and intentions plays a pivotal role in melding ecologically conscious practices, encompassing food consumption and waste management. Using the quantum model, Tesař (2019) investigates this dynamic in more detail and shows how subjective norms—which are expectations about the acts of others—strongly affect an individual's behaviour. This model offers a novel viewpoint on how decision-making processes, especially those aimed at minimizing food waste, might be impacted by predicting others' actions and whether they conform to or deviate from social norms. Ananda et al.'s study from 2023 lends empirical support to this theory by demonstrating how social norms, motivation, and practical food management practices all have a significant impact on family food waste behaviours. This means that improving particular social norms can increase the efficacy of food waste reduction programs. According to Bhatti et al. (2019), young consumers' attitudes on decreasing food waste are significantly influenced by time constraints and environmental concerns. Nevertheless, moral norms and perceived behavioural control do not significantly affect the intentions to reduce vegetable and fruit waste, despite the fact that injunctive norms have a beneficial impact on it.

The results of research have repeatedly shown how beneficial social norm modification treatments are in improving waste reduction intentions as well as actual practices. For example, in a study done by Goldstein et al. (2008), participants were told about their colleagues' waste reduction strategies. The participants' perceptions of societal norms supporting trash reduction and their actual waste reduction actions both increased dramatically as a result of this intervention. Subjective norms have a significant impact on people's intentions to be environmentally conscious because people are more inclined to act sustainably when they perceive others to be acting similarly. According to Han and Hyun's (2016) study, fostering a social setting where sustainable behaviours are evident encourages guests to partake in comparable activities, strengthening the idea of shared ecological responsibility.

Morris et al. (2015) point out that subjective norms impact cultural dynamics at both the micro and macro levels. They exist both objectively as behavioural regularities and subjectively as perceived norms. They suggest that standards that are both descriptive and injunctive serve as separate navigational aids, directing conduct through what they refer to as "social autopilot" and "social radar" systems. This dual influence shows how deeply ingrained subjective norms are in both society institutions and individual perceptions, which is important for encouraging behaviours like cutting down on food waste. Furthermore, Filimonau et al. (2023) looked into how subjective norms affected restaurant clients' intents to cut down on food waste. The study made clear that although religious convictions may not have a direct impact on social standards,

they do so indirectly through the influence of things like compassion and upbringing in the family. Interestingly, it was discovered that intentions to reduce vegetable and fruit waste are strongly boosted by injunctive norms, or social expectations of approval or disapproval. This finding highlights the powerful role that social influence plays in encouraging pro-environmental behaviour. The goal to reduce food waste is greatly influenced by subjective norms since people typically conform their behavior to what they think other members of their social group are doing or expecting. People are more inclined to adopt similar practices when they see that their community reduces food waste because they feel pressured to live up to subjective norms, according to Kallgren et al. (2000).

Melnyk et al. (2019) carried out a meta-analysis to differentiate between descriptive norms—what people really do—and injunctive norms—what people approve of—in their influence on consumer decision-making, further clarifying the role of social norms in influencing behaviour. Their research, which took into account 297 studies, shows that although injunctive norms mainly influence intentions, descriptive norms have a greater direct impact on customer behaviour. Shin et al. (2018) provide additional evidence of the impact of social norms on individual decisions by showing that subjective norms, as well as personal norms, attitudes, and perceived behavioural control, have a significant influence on restaurant patrons' intentions to choose organic menu items. According to the study, encouraging positive subjective norms surrounding the consumption of organic food might motivate people to make more ecologically friendly eating choices, which would in turn affect customer preferences and behaviours and thereby reduce food waste. Furthermore, Apolonio and Lacaza (2022) look into how family food waste practices are impacted by subjective norms in various cultural contexts. Their research indicates that intentions to reduce food waste might be strongly impacted by the interaction between moral standards and the "good provider" norms within a society. To be more precise, strong moral norms regarding food conservation may reduce food waste in some cultural contexts, while in others, the need to uphold the good provider image may cause it to increase.

Together, these research highlight the complex influence of subjective norms on actions related to reducing food waste. They demonstrate how societal norms impact sustainable practices through intricate interactions with incentives, and cultural contexts in addition to having a direct impact on individual behaviours. Therefore, in order to fully utilize social influence in encouraging sustainable habits across a range of demographics, effective strategies for minimizing food waste must take these dynamics into account.

1.2.3 Perceived behavioural control

In particular, when it comes to ecologically conscious acts like cutting down on food waste, the Theory of Planned Behaviour (TPB) provides a fundamental framework for comprehending and forecasting human behaviour (Ajzen, 1991; Collins et al., 2007). According to TPB, the three main components influencing behaviour are attitude, subjective norm, and perceived behavioural control (PBC), which measures a person's confidence in their ability to do a desired action (Ajzen, 1991). Studies continuously demonstrate the critical role that PBC plays in promoting ecologically sensitive behaviours, such as initiatives to cut down on food waste (Abrahamse et al., 2005; Thøgersen, 2006).
In addition to influencing actual conduct, perceived behavioural control also shapes intentions through interactions with societal and personal standards. Even if they currently have high levels of food waste, people who feel they have significant control over their food management practices are more likely to have strong intentions to minimize food waste, according to a study by Martin-Rios et al. (2022). Overcoming obstacles to waste reduction behaviours also requires a strong sense of perceived behavioural control. For example, study by Loopstra (2018) demonstrated that people's perceptions of obstacles, such as a lack of money, insufficient access to enough food, and improper food use, can greatly discourage them from taking part in activities that reduce food waste.

According to Armitage and Conner's (2001) meta-analytic assessment, people's intentions to purchase only required fruits and vegetables and to adopt more economical cooking and eating habits are highly influenced by their perception of their own behavioural control (PBC). This impact is clear since, when other factors are taken into account, PBC alone accounted for a sizable percentage of the variance in both intention and behaviour. They discovered that when people feel capable and empowered to carry out eco-friendly activities, such recycling or cutting down on food waste, these behaviours become internalized as personal standards, increasing the likelihood that they will carry them out on a regular basis.

Quested and colleagues (2013) investigated the relationship between households' food waste habits and perceived behavioural control in a more in-depth study on food waste. Their results imply that intentions to reduce vegetable and fruit waste were more likely to emerge and persist among people who felt they had greater control over how food was prepared and stored. According to the study, consumer-focused interventions that enhance consumers' food management knowledge and abilities can greatly increase their sense of control of food waste. Similarly, Ertz et al. (2017) conducted a study that examined the impact of perceived behavioural control on the adoption of sustainable consumption practices. The researchers

discovered that people's beliefs can strongly ingrain environmentally friendly activities into their intentions to reduce food waste when they believe they have the time, money, and resources necessary to carry out these actions. The importance of external restrictions on perceived behavioural control is highlighted by research by Quester et al. (2013), which also highlights the complex interaction between an individual's skills and the environmental circumstances that shape their beliefs about food waste behaviour. According to Lin and Guan's study from 2021, people who believe they have more control over what they do—much like those who recognize the power of the government—are more inclined to practice waste reduction.

The Theory of Planned Behaviour (TPB) and Norm-Activation Theory (NAT) are combined in Klöckner's (2013) meta-analysis, which proposes that PBC increases people's self-efficacy in carrying out particular actions, including cutting back on waste. According to the study, people are more inclined to internalize these practices as part of their own standards when they believe they have control over their behaviour and the tools and social support they need to manage waste well. The results of the study conducted by Çoşkun and Özbük (2020) support the idea that intentions about cutting down on vegetable and fruit waste are significantly shaped by perceived behavioural control. The researches suggested that customers' intentions to decrease food waste in restaurants would be significantly impacted by elements like food flavours and price sensitivity, which would then have an impact on the quantity of food discarded.

Furthermore, Fabgemi et al. (2021) investigated how students' attitudes regarding food waste were impacted by their perception of behavioural control and subjective norms, and they found a significant favourable impact. According to this study, those who feel competent about controlling their food intake are more likely to assume a pro-reduction attitude toward food waste which influences the intention to reduce food waste. Van Der Werf et al. (2019) examine household food waste through the perspective of the Theory of Planned Behaviour (TPB) and find that perceived behavioural control emerges as a key element determining food waste behaviour. In a similar vein, E. Kim et al. (2013) show that consumers' perceived behavioural control—a measure of their confidence in their ability to understand and use nutritional information—strongly influences their intentions to use nutritional labels. This research suggests that people are more likely to embrace waste-reduction techniques when they feel empowered to make educated food choices, which has wider implications for behaviours like cutting down on vegetable and fruit waste in households.

Perceived behavioural control (PBC) has a major influence on Malaysians' behavioural intentions to reduce food waste, according to a study by T'ing et al. (2021). The behavioural intention to reduce food waste was found to be significantly influenced by PBC, attitude, and personal norms. They stated that a major factor influencing how customers behave is their accountability for the food they eat. Graham-Rowe et al. (2015) used the extended TPB to study how household food waste can be reduced. They discovered that the goal to lessen home waste related to fruits and vegetables was specified by the PBC. In a similar vein, Pakpour et al. (2014) showed that PBC significantly predicts Iranian consumers' domestic waste behaviour. Additionally, "controlled belief" was discovered by Ghani et al. (2013) to be a significant predictor of behavioural intentions for food waste separation. Expanding upon earlier research, Fan et al.'s more recent study from 2023 looked at the connection between university students' food waste habits and PBC. The findings showed that lower levels of food waste behaviour were linked to greater PBC levels. Apart from the aforementioned studies, additional research has underscored the significance of PBC in influencing food waste behaviour.

Apart from the aforementioned studies, additional research has underscored the significance of PBC in influencing food waste behaviour. According to Schrank et al.'s study from 2023, people who felt more in control of their food waste behaviour were also more inclined to plan their meals, use leftovers, and refrain from making unnecessary food purchases. People's beliefs about behavioural control are influenced by perceived barriers, which include both internal and external elements such as self-efficacy and resource availability (Vermeir & Verbeke, 2008). Research emphasizes how internal and external factors interact intricately to influence efforts to reduce food waste, underscoring the significance of taking into account both PBC aspects (Randall et al., 2024). Furthermore, perceptions of behavioural control are influenced by sociocultural influences, as subjective norms can either facilitate or hinder personal efforts to minimize food waste (Phan, 2024).

It's also critical to take into account how perceived behavioural control interacts with other psychological elements like unfavourable sentiments. The study by Barone et al. (2019) emphasizes the complex interactions between these psychological categories by examining how people's feelings of control over their waste-reducing efforts are influenced by negative sentiments regarding food waste. Kristia et al. (2023b) emphasize in their study the significance of contextual elements in influencing perceived behavioural control about reducing household waste, such as knowledge levels and resource accessibility.

For the purpose of comprehending and forecasting environmentally sensitive behaviours, such cutting down on food waste, the Theory of Planned Behaviour (TPB) offers a strong foundation. Perceived behavioural control (PBC), which affects intentions toward taking sustainable activities, is a major determinant within this paradigm. Studies repeatedly highlight the fact that people's views of control over their behaviours—especially when it comes to controlling and minimizing waste—directly reinforce their intentions and raise the possibility of long-term waste reduction practices.

1.2.4 Anticipated quilt

A more complex understanding of anticipated guilt's (AG) involvement as an emotional component drawn from the Theory of Interpersonal Behaviour (TIB) is provided by incorporating it into the conversation about influencing intentions to reduce vegetable and fruit waste. The TIB conceptualizes anticipated guilt as an emotional driver that highlights the internal conflict that arises when people act in a way that may violate their own ethical rules, especially when it comes to environmental stewardship and waste reduction. Based on the Theory of Planned Behaviour, anticipated guilt is an affective reaction people anticipate when they think about doing something that goes against their set of personal standards (Rosenthal & Yu, 2022). According to this paradigm, action is greatly influenced by emotional elements such as anticipated guilt, which affects intentions, which determines the food waste behaviour. Thus, behavioural changes are motivated by the expectation of guilt for causing food waste to prevent such detrimental emotional effects (Attiq et al., 2021).

Anticipated guilt is examined in the context of sustainable consumption patterns in the study by Onwezen et al. (2013). It suggests that people's motivation to match their consumption habits with their standards can be greatly increased by anticipating shame, which will reduce the amount of vegetables and fruit wasted. Turner et al. (2023) looked at the impact of anticipated guilt and moral standards on COVID-19 preventive activities. The results show a connection between moral standards and anticipated guilt in the context of physical separation, which could motivate households to take pre-emptive action about vegetable waste. Culiberg et al. (2022) demonstrates how anticipated guilt acts as a crucial emotional precursor that shapes subjective norms and directs people toward actions that lessen food waste. Anticipated guilt may motivate people to make more thoughtful meal plans and grocery lists in order to prevent acquiring surplus food that is then thrown away (Stancu et al., 2016). Recycling and composting might also be motivated by anticipation of guilt. When people send organic waste to a landfill, where it produces methane, they feel guilty, which can encourage them to compost in order to lessen their

environmental effect (Nigbur et al., 2010). By incorporating anticipated emotions, research by Onwezen et al. (2014) expands on TPB and demonstrates that intentions to participate in pro-environmental action, like cutting back on food waste, may be strongly predicted by anticipated guilt. According to research by Soorani and Sepaskhah (2019), consumers feel guilty when they throw away or waste food that may be used, which encourages them to cut down on food waste to lessen this bad feeling. According to research by Priya et al. (2023), people are highly motivated to reduce food waste when they anticipate feeling guilty. According to the study, households that anticipated feeling more guilty were more likely to use strategies to reduce food waste. Additionally, scholars point out that improper calculations made during meal preparation, a lack of appreciation for food, and a deterioration of traditional Indian value systems are some of the reasons behind increasing food waste in households.

Related to McCarthy and Liu (2017), consumers' aspirations to reduce food waste are found to be significantly influenced by guilt, an important emotional driver. They stated that households with higher incomes, younger children, and a propensity for eating out were more likely to waste food. According to the study, those who feel guilty about wasting food are more inclined to take part in waste-reducing activities like meal planning and inventive use of leftovers. This emphasizes how emotional reactions might encourage ecologically friendly consumption practices. People are more committed to their own waste avoidance rules when they are faced with the possibility of feeling bad about throwing away food, particularly veggies (Roe et al., 2020). This emotional cue successfully encourages people to reevaluate waste-producing habits and shift their behaviour in the direction of more ecologically friendly ones. However, a study by Fazal-e-Hasan et al. (2023) found that people are not sufficiently motivated to reduce food waste by regret or shame in particular. In addition to avoidance and distraction, anticipating guilt can impact everyday routines like deciding how to use leftovers in a novel way or modifying portion sizes to guarantee that food is not wasted (Quested et al., 2013). To investigate the impact of AG on reduced carbon consumption behaviours, Jiang et al. (2020) included it in the Theory of Planned Behaviour (TPB) model. It discovers that in addition to attitude, subjective norm, and perceived behavioural control, anticipated guilt has a substantial impact on people's intentions toward reducing their carbon footprint. As per Ahn et al. (2014), the fear of societal criticism might intensify guilt feelings, hence reinforcing the dedication to eco-friendly actions. This link is especially strong in close-knit or communal environments when peer pressure is palpable and strong.

1.3 Personal norms

Personal norms or moral norms are the internal standards and ideals that serve as a moral compass for people, directing their actions according to what they believe is right in each particular circumstance (Guan & Qian, 2023). Designing efficient interventions aiming at waste reduction in the context of minimizing vegetable and fruit waste requires an understanding of how personal norms relate to these intentions. In this discussion, the Norm Activation Model (NAM) (Schwartz and Howard, 1981) acts as the fundamental theory. According to NAM, a person's perception of their ability to carry out the helpful action and their awareness of the consequences of their actions (or inactions) and their responsibility to mitigate harm are what trigger the activation of personal norms. Given the growing awareness of the negative effects that waste has on the environment and society, this activation process is essential to reducing vegetable and fruit waste.

Presented research projects focusing on the effects of distinct fruit and vegetable standards on the reduction of waste. Wang et al. have found that the use of continuous vegetable products negatively impacts moral perceptions. The cognitive, social, environmental, and emotional factors within Chinese family dynamics underscore the significant value of waste reduction principles. Several research have demonstrated a strong correlation between personal values and environmentally conscious actions, specifically in the context of waste reduction activities. In Thøgersen's 2006 study, it was observed that strong subjective norms have a significant impact on increasing interest in recycling and composting activities. The study conducted by Ma et al. (2013) examines the influence of benefit awareness, boldness, and personal norms on the decrease of food waste with an emphasis on ethical considerations. An intriguing aspect is revealed when we compare the consequences of abandoning our home, Earth, to the implications of neglecting personal standards. Research conclusions: a significant connection has been demonstrated between personal norms and activities encouraging environmental progress. Consider waste reduction, for example. Thøgersen, in 2006, carried out a study that found that in cases where an individual norm for waste reduction was more powerful, the person would be more inclined to actively engage in waste reduction behaviours such as composting or performing recycling. Further expanding on this, Obuobi et al. (2023) continued examining the influences of benefits understanding, lack of uncertainty, and personal norms on some families' intent to curtail food waste - from a strongly moral standpoint. The conclusions yielded from these inquiries disclose the subsequent: a propensity for individualized principles that contribute to advantageous results on the drive to diminish food waste. Carelessly and unfavourably impacting this lofty determination can yield a perceptible repercussion.

Personal norms are malleable and can be influenced by specific communication and education. It is feasible to enhance personal norms and hence increase intents to minimize waste by raising awareness of the consequences that fruit and vegetable waste has on the environment and society as well as by demonstrating the efficacy of individual actions. Studies that have used educational interventions to improve knowledge and awareness and then shown an increase in pro-environmental actions lend credence to this (Goldstein et al., 2008). Aydın and Yıldırım (2021) discovered a direct correlation between waste reduction behaviours and personal norms, as those who have strong personal standards for sustainability are more likely to participate in activities that reduce food waste. Graham-Rowe, Jessop, and Sparks (2014) used an extended version of the Theory of Planned Behaviour (TPB) to anticipate and understand food waste behaviours in households. Notably, their research integrates personal norms into the TPB framework and shows how these norms have a major impact on people's intentions to reduce food waste. The study emphasizes how important a psychological process personal norms are in encouraging people to adopt waste-reducing activities.

Visschers et al. (2016) conducted an analysis of household food waste patterns using the Theory of Planned Behaviour, providing additional insight into the influence of personal norms on waste reduction. Their research emphasizes how important it is to reduce food waste by taking into account objectives, perceived behavioural control, and personal standards. This thorough approach offers a thorough grasp of how individual attitudes toward sustainability can be translated into doable, day-to-day activities that support environmental preservation. The 2009 paper by Steg and Vlek emphasizes how subjective norms and personal ethical convictions have a significant impact on personal norms, which in turn drive pro-environmental behaviours. Their results imply that in order to effectively encourage these kinds of activities, interventions must not just focus on changing individual attitudes but also cultivate norms that are supportive of society.

Strong personal standards for environmental sustainability are correlated with a greater propensity to reduce vegetable waste at home, according to research by Karunasena et al. (2021). This suggests that reinforcing personal norms can encourage more sustainable behaviours. Finally, Wu et al.'s research from 2023 indicated that one of the main factors influencing family-level intents to prevent food waste is personal norms, highlighting the critical role that personal norms play in encouraging sustainable food consumption habits. In their study, T'ing et al. (2021) demonstrated that behavioural intention to decrease food waste is significantly influenced by personal norms (PN). The findings of the Iriyadi et al. (2023) study shown that when consumers believe they bear responsibility for the adverse effects of food waste, the personal

norm, which is at the heart of NAT, might become active. Furthermore, the development of consumer intents to reduce food waste is significantly influenced by active personal norms.

An important influence on intentions and actions linked to cutting down on the wastage of fruits and vegetables is personal norms. Research continuously demonstrates that people are more inclined to reduce their waste when they have strong personal beliefs about the value of sustainability. Thus, efforts to reduce food waste on a personal and societal level can be greatly boosted by strengthening these norms through focused educational and community-based programs.

1.4 Factors that influence personal norms

Creating tactics that effectively encourage sustainable behaviours requires a thorough understanding of the factors influencing individual norms, which in turn fuel the desire to reduce vegetable and fruit waste in Lithuania. Numerous psychological, social, and societal factors influence these norms. These include awareness of consequences and ascription of responsibility. Each of these factors is crucial in determining how people absorb standards that direct their behaviour toward reducing waste, highlighting the complex strategy required to promote environmentally conscious behaviour.

1.4.1 Awareness of consequences

Individual behaviour is greatly influenced by awareness of the economic and environmental ramifications, especially when it comes to trash management. The altruistic model of behaviour analysis presupposes that an individual must also be cognizant of the repercussions of their actions (Schwartz, 1977). The notion of consequence awareness is ingrained in environmental psychology and is frequently examined in connection with the Value-Belief-Norm (VBN) theory. This theory postulates that people's perceived obligation to engage in environmentally friendly behaviours is influenced by their values, beliefs about the world, and perceived efficacy in reducing threats (Stern, 2000). Concerning the reduction of vegetable and fruit waste in homes, awareness of consequences (AC) is essential for influencing goals on waste reduction practices. The results of the Han's (2014) study show that being conscious of the detrimental effects of one's activities can greatly increase the attribution of responsibility, which in turn reinforces personal standards associated with environmentally conscious conduct.

Research by Hansla et al. (2008) offers empirical evidence for the hypothesis that personal norms are strongly influenced by awareness of consequences, particularly when it comes to environmental behaviour, which includes things like cutting down on food waste. Furthermore,

people's views of subjective norms and expectations about waste reduction actions are influenced by their awareness of the consequences (Steg & Vlek, 2009). The findings indicate that people who are conscious of the impact their actions have on the environment are more likely to recognize the expectations and norms of society that support eco-friendly measures, such as reducing waste. According to Barr et al. (2010), educational initiatives that highlight the negative effects food waste has on the environment and society can raise people's knowledge and concern, which in turn can affect their intentions about waste reduction. When people learn about the harmful consequences of waste, they may experience cognitive dissonance if their actions don't align with this understanding. Because cognitive dissonance causes psychological discomfort that people are motivated to overcome, it can be a potent incentive for change. (Harland et al., 2007). Ma et al.'s (2023) study persuasively shows that Chinese households' intentions to reduce waste are strongly influenced by their increased awareness of the consequences of food waste. This awareness serves as a link between the practical application of waste reduction techniques and the cognitive recognition of waste issues.

People who are conscious of the effects that the manufacturing and disposal of things have on the environment can modify their consumption patterns to reduce waste. Some of these changes include selecting products with minimal packing, going for reusable items, and cutting back on total consumption. According to Thøgersen's (2004) research, consumer choices that are more sustainable can result from awareness efforts that successfully convey the life cycle implications of products. People are more likely to support and abide by local and national policies aimed at waste reduction as they become more aware of the negative effects of waste. Examples of these policies include voting for measures that promote sustainability, taking part in community programs, and following rules intended to minimize waste. Support for environmental policy and awareness of consequences have been found to be strongly correlated (Clark et al., 2003, Asefi et al., 2024).

1.4.2 Ascription of responsibility

In environmental behaviour, "ascription of responsibility" refers to the process of determining and placing blame on oneself or other parties for the negative effects that particular activities, like the creation of waste, have on the environment. This idea entails realizing the critical roles that people, groups, and institutions play in exacerbating or causing environmental problems. This idea, sometimes referred to as "ascription of responsibility" (AR), is essential to comprehending how parties required to handle a certain challenge—like waste reduction—are assigned responsibilities or obligations (Jones & Baumgartner, 2005). The concept of assigning blame is ingrained in a number of sociological and psychological theories. For example, the

Norm Activation Model (NAM) suggests that pro-environmental conduct is influenced by personal norms that are activated when one recognizes one's own responsibility (Schwartz, 1977). According to this paradigm, people need to feel personally responsible for reducing an issue such as food waste before they can take action to remedy it.

A significant element influencing intentions toward waste reduction behaviours in the context of minimizing vegetable and fruit waste in families is the attribution of blame. People who believe they are in charge of reducing the amount of wasted fruit and vegetables are more inclined to establish personal standards that place an emphasis on sustainability and efficient trash disposal. Their adoption of actions that conform to these norms is encouraged by their sense of personal responsibility, which makes a considerable contribution to waste reduction efforts.

Studies have indicated a correlation between the adoption of pro-environmental actions and the perception of accountability for tackling environmental challenges, such as food waste (Schultz, 2001). Vicente and Reis (2008) also discovered that assigning blame was a significant predictor of waste sorting behaviour, emphasizing the significance of this concept in waste management procedures. According to the De Groot and Steg (2009) research, assigning blame has a big impact on personal norms, which then have an impact on prosocial intentions and actions. The study backs up the mediator model of NAM, suggesting that prioritizing responsibility and awareness-raising over personal norms may increase the efficacy of programs aimed at promoting prosocial behaviour, such as cutting down on food waste.

The findings of Mangas et al. (2021) indicate a tendency towards the enhancement of personal norms associated with sustainable actions, albeit not explicitly addressing food waste. This suggests that students' sense of personal responsibility is triggered when they actively participate in projects that emphasize the value of sustainability, which may have an impact on behaviours like cutting down on food waste. The study of Bolderdijk et al. (2012) showed that interventions that highlight people's responsibility for addressing environmental issues, such as food waste, might increase people's sense of accountability and encourage them to engage in waste reduction practices. Accepting responsibility frequently results in a moral duty to take action. This moral engagement is important because it helps people live more in accordance with their moral principles, which frequently results in long-lasting and consistent behavioural change (Bamberg & Möser, 2007).

A sense of responsibility can be promoted by policies that increase the transparency of the environmental costs of goods and actions. Customers may become more aware of their options, for instance, if laws requiring food goods to have more accurate labels regarding their

environmental impact are put into place (Stein & De Lima, 2021). A key factor in assigning responsibility is education. A sense of responsibility can be developed from an early age through school and community activities that emphasize the effects of waste and the significance of waste reduction (Kollmuss & Agyeman, 2002).

1.5 Models and theories used for food waste research

To create efficient interventions and policies, it is essential to comprehend and forecast human behaviour in the context of food waste. Food waste study has made use of several models and theories to offer a theoretical framework for examining the variables influencing people's behaviour. The Norm-Activation Theory (NAT), the Theory of Interpersonal Behaviour (TIB), and the Theory of Planned Behaviour (TPB) are three well-known theoretical frameworks that provide the foundation for this study's inquiry into the complex dynamics of food waste behaviour. The purpose of this deliberate synthesis of theoretical viewpoints is to offer a thorough grasp of the various factors that affect people's intentions about reducing food waste.

Schwartz (1977) developed the Norm-Activation Theory (NAT), a well-known theoretical framework for analysing people's pro-environmental actions, such as attempts to cut down on food waste. According to NAT, personal norms—which are internalized rules that specify what an individual should do in particular circumstances to be consistent with their values and beliefs—have an impact on people's environmental behaviours. Four requirements must be met, according to NAT, for a norm to be activated: (1) One must be conscious of one's need for assistance, a concept known as awareness of need; (2) one must be conscious of the effects that a particular behaviour might have on the person in need, a concept known as awareness of consequences in the theory; (3) The concept of the ascription of responsibility, which states that an individual must take ownership of their acts, and (4) the necessary condition is that the individual believes they are capable of carrying out the helpful activity; this concept is similar to perceived behavioral control (Klöckner, 2013). Studies have shown that knowledge of need and awareness of consequences can coexist empirically, leading some researchers to use awareness of need or awareness of consequences.

According to NAT, people who have strong personal norms about environmental conservation are more likely to take actions that minimize food waste, which is relevant when it comes to reducing vegetable and fruit waste in households. The path proposed by norm activation theory, which posits that circular product purchase is strongly explained by contextual factors in addition to alternative paths, is supported by the study conducted by Sajjad et al. (2024). As a result, consumer green innovativeness, perceived consequences, and environmental corporate social responsibility

activities have a substantial impact on personal norms and green self-identity. From the suggested pathways, circular product buying is more explained by personal norms than by green self-identity. The study by Teng et al. (2022b) investigates food choice reasons and their effect on lowering food waste in dining-out scenarios by integrating the Theory of Planned Behaviour (TPB) and Norm Activation Theory (NAT). By demonstrating how subjective norms, particularly in the context of reducing food waste, can activate and strengthen intentions toward pro-environmental behaviours, these results support NAT. The study shows how lowering food waste in the hospitality sector can be achieved by comprehending and influencing customer reasons, which are mediated by intents and controlled by subjective norms.

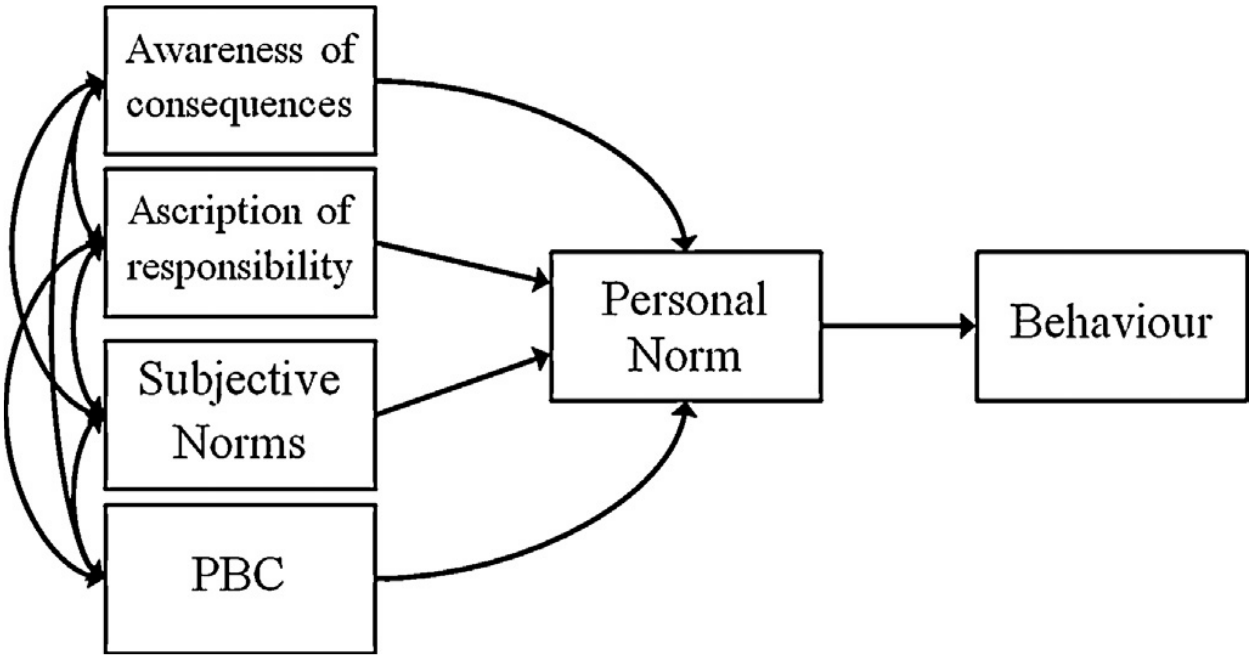

Figure 1. Model of the Norm-Activation Theory

Triandis (1977) developed the Theory of Interpersonal Behaviour (TIB), which provides insights into how interpersonal influences and subjective norms affect people's intentions and behaviours. TIB proposes that social, emotional, and cognitive factors - such as anticipated guilt, sense of community, awareness of consequences, ascription of responsibility and environmental knowledge - all influence behavioural responses (Ibrahim et al., 2017). According to TIB, social norms within interpersonal networks - such as those within families, friends, and communities - play a critical role in influencing people's intentions and behaviours when it comes to lowering vegetable waste in homes. Research by Smith and Louis (2008) supports this perspective, indicating that subjective norms significantly influence individuals' intentions to engage in pro-environmental behaviors, including efforts to reduce food waste. The study by Wang et al. (2023)

using the theory of interpersonal behavior with perceived benefits and utilizing data from 615 sampled citizens in Jiangsu, analysis was conducted using partial least squares structural equation modeling. Empirical evidence revealed that effect, attitude, and social factors positively influence citizens' household municipal solid waste separation intentions.

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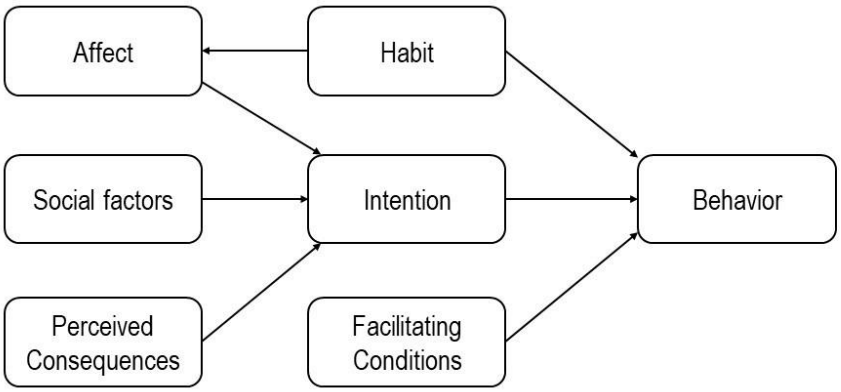


Figure 2. Model of theory of Interpersonal Behaviour

According to Russell et al. (2017), environmental behaviour is frequently predicted and explained by the Theory of Planned Behaviour (TPB). Approximately 40% of papers in the environmental psychology domain use it as their theoretical foundation. The adaptable structure has demonstrated efficacy in forecasting diverse domestic practices, such as water preservation (Fielding et al., 2012), utilization of public transportation (Heath & Gifford, 2002), and mental budgeting (Habibah et al., 2018).

Moreover, the TPB's inclusion offers a conceptual framework for analysing goals to reduce food waste. The TPB, which has its roots in Ajzen's seminal research from 1991, suggests that behavioural intentions are influenced by a combination of attitudes, subjective norms, and perceived behavioural control. A crucial element of the TPB, perceived behavioural control (PBC), is the subject of special attention in this study. The importance of PBC is highlighted by examining people's opinions about their control over food-related activities, such as their capacity to minimize food waste. A person's perception of control is highly impacted by a variety of

elements, including knowledge, resources, and outside constraints (Vartanian et al., 2008). Empirical studies, such as the meta-analysis by Armitage and Conner (2001), constantly highlight the TPB's efficacy in predicting a range of actions, hence corroborating its usefulness and accuracy.

According to Han et al.'s (2018) study, attitudes and subjective norms have a substantial impact on tourists' intent to reduce trash. This advantageous effect is also seen in the case of visitors staying in green hotels, where attitudes, subjective norms, and perceived behavioural control all play significant roles in determining the guests' intentions to stay (Olya et al., 2019). Similarly to, in the food service sector, workplace settings for the separation of takeout waste are influenced by consumers' attitudes and perceived behavioural control (Liao et al., 2018). Diners' behavioural intention to frequent eco-friendly restaurants is significantly shaped by their positive attitude, subjective norms, and perceived behavioural control in the food service industry (Jang et al., 2014). According to the expanded Theory of Planned Behaviour (TPB) model, customers' behavioural intention to eat at sustainable restaurants is directly impacted by their subjective norms, attitudes, and perceived behavioural control on sustainability.

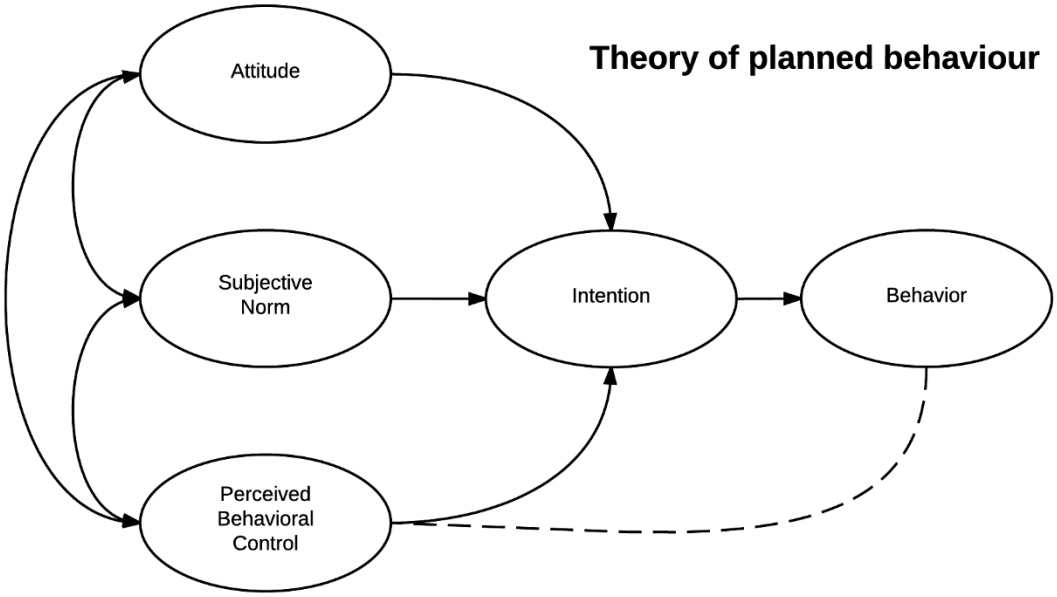


Figure 3. Model of theory of planned behaviour

Together, these models provide a thorough understanding of the variables influencing food waste behaviours as well as useful locations for targeted interventions. Efforts in education and policy-making can be customized to target the particular components that each model emphasizes,

including improving information, changing attitudes, changing norms, and offering useful techniques for behavioural control.

2. METHODOLOGY

2.1. Aim, model and hypotheses of the research

Based on the literature analysis completed in the first research section, the research technique is described in segments in the section that follows. The study purpose, research model, technique of variable selection, and explanation and presentation of hypotheses are all included in the section on research methodology. In addition, research data collection techniques, study design, variable (construct) measurement, service, respondent, and size selection are given; additionally, the instrument used to calculate measurement reliability and the data analysis tool are presented. Researchers have thoroughly examined how psychological elements including environmental awareness, anticipated guilt, and personal norms affect waste reduction activities in the previously examined literature (Ajzen, 1991; Thøgersen, 2006). Although these studies show a direct correlation between people's aspirations to reduce waste and their awareness of the environmental consequences, there is still a lack of research on the interaction between these characteristics and actual household behaviour (Quested et al., 2013; Graham-Rowe et al., 2014). Notably, environmental awareness and personal norms greatly contribute to intents to decrease waste; yet, it is not always easy to translate these intentions into concrete waste reduction actions (Barr, 2007; Peattie, 2010; Obuobi et al., 2023). This points to a knowledge vacuum on the ways in which these psychological concepts interact with the intricate dynamics of daily household decision-making. The household context provides a unique setting for researching how elements like a sense of community and ascription of responsibility can be leveraged to enhance the effectiveness of interventions aimed at reducing vegetable and fruit waste, according to researchers like Van Stekelenburg and Klandermans (2017), McNamara et al., (2021), and Gross et al., (2017). Therefore, incorporating these psychological insights into routines for managing household waste could open the door to new approaches for encouraging sustainable behaviour.

Research aim: from theoretical and empirical aspects to analyse psychological factors on the intention to reduce vegetable and fruit waste in Lithuania.

Based on the results of the literature analysis, the research models, methodologies, and recommended study variables of other authors, a research model (see Figure 4) was created to accomplish the research goal. By doing this, it was possible to determine which variables were most appropriate and necessary for building the research model as well as how to quantify the impact of psychological factors on the intention of households to reduce the waste of fruits and vegetables. Based on the models of planned behaviour, interpersonal behaviour, and norm-

activation theory, the research model (see Figure 4) was developed. Model offered a thorough framework to comprehend how emotions, community dynamics, and environmental knowledge interact with recognized psychological constructs to form waste reduction intentions. This model is intended to capture the intricate interactions between awareness of consequences and ascription of responsibility which influence personal norms which influence intentions to reduce food waste, together with attitude, subjective norms, perceived behavioural control and anticipated guilt in relation to fruits and vegetables.

The first independent variable which is awareness of consequences, was taken from Norm-Activation theory, another important factor, is the ability to understand how one's activities affect society and the environment. This knowledge has a big impact on personal norms in terms of reducing food waste (Steg & Vlek, 2009; Han, 2014). As per Jones and Baumgartner (2005) and Bamberg & Möser (2007), ascription of responsibility, second independent variable, which is closely associated with the Norm Activation Model (NAM), suggests that accepting personal accountability for the outcomes of food waste is essential to developing a proactive approach to waste reduction. Additionally, personal norms, which is a first dependent variable, are integrated into the theory of interpersonal behaviour model in response to Sung et al. (2019) discoveries. This variable functions as a social factor in the model, signifying the personal standards or internalized ethical commitments that people have with regard to waste reduction. Personal norms are viewed as reliant on both ascription of responsibility and awareness of the consequences. The intricacy of how personal norms form and their crucial significance in influencing intention to decrease food waste are highlighted by this dual influence.

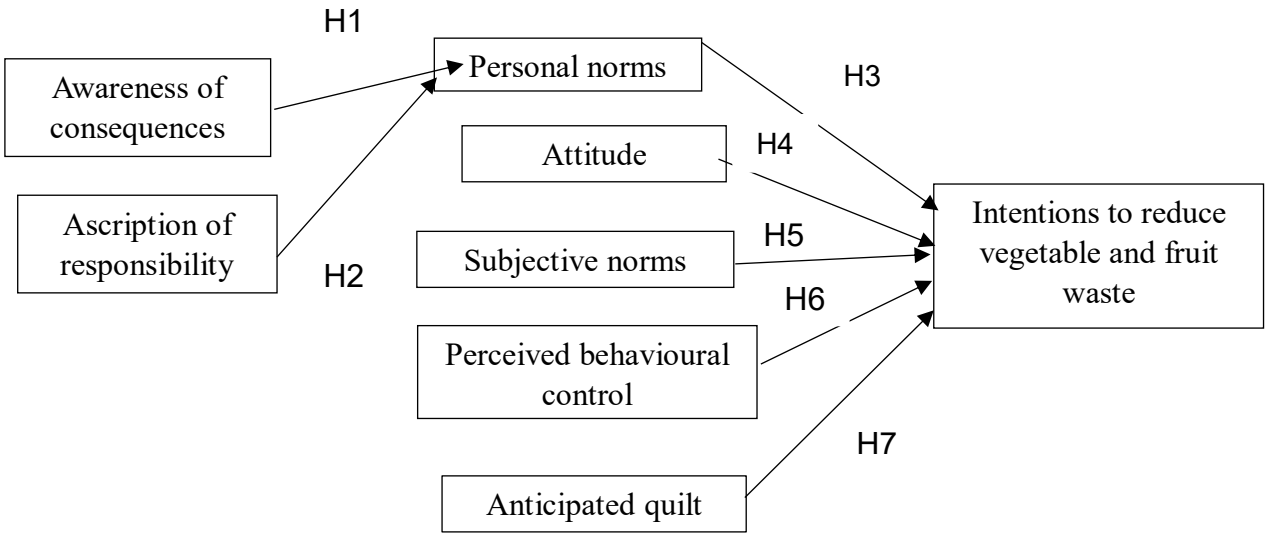
Within the model, attitude toward waste reduction, which is the third independent variable, serves as a major node that impacts intentions to reduce vegetable and fruit waste in Lithuania. It was taken from the theory of planned behaviour and as a perceived consequences variable from the theory of interpersonal behaviour (Sung et al., 2019). It captures an individual's assessment of themselves and their propensity to participate in waste-reducing activities (Bredahl, 2001; Ajzen, 1991; Ahmed et al., 2021). Drawing from both the theory of planned behaviour and the theory of interpersonal behaviour as a social factor variable, the fourth independent variable—subjective norms—illustrates the potent impact of societal pressures and expectations on individual conduct (Sung et al., 2019). Subjective norms are positioned in the model to have a direct effect on the intention to reduce vegetable and fruit waste (Filimonau et al., 2023).

The fifth independent variable is a person's evaluation of their capacity to carry out a behaviour, like cutting back on waste, which is reflected in perceived behavioural control (PBC), which is derived from the Theory of Planned Behaviour and as an effect variable from the theory of

interpersonal behaviour. PBC has a major influence on the development of intentions to engage in waste-reducing behaviours (Martin-Rios et al., 2022; Ertz et al., 2017). According to Attiq et al. (2021), anticipated guilt, which is the sixth independent variable, people may feel distressed emotionally when their behaviours don't align with their standards. This is especially true when it comes to waste reduction. The variable was taken as an effect variable from the theory of interpersonal behaviour. The model's integrated approach highlights the complex interplay of emotional, cognitive, and community-oriented factors in building sustainable home practices, underscoring the diverse nature of behavioural change. The conceptual framework's synthesis of these elements provides a thorough understanding of the psychological dynamics driving home waste reduction ambitions.

Figure 4

The Research model



Source: compiled by the author, based on the theory of planned behaviour, theory of interpersonal behaviour, and norm-activation theory, and literature analysis.

The research model (see Figure 4) was created using a combination of adapted variables from Klöckner (2013), Ma et al. (2023), Attiq et al. (2021), Boo and Park (2013), Ajzen (1991). In the model (see Figure 4), connections between constructs can be seen. The compiled research model was used as a guide to conduct the research and to create the research hypotheses that explain connections between variables, allow to study, and find answers to research problem and aim.

Understanding the environmental and economic effects of wasteful activities fosters responsible actions, hence awareness of consequences associated with vegetable and fruit waste influences personal norms in terms of minimizing waste (Thøgersen, 2004; Barr et al., 2010). Research has shown that people are more likely to adopt waste-reducing behaviours when they are aware of the negative implications of food waste, such as increased greenhouse gas emissions and resource depletion (Han, 2014; Hansla et al., 2008). Moreover, heightened cognizance of the ramifications may also result in an increased assumption of accountability, so strengthening individual standards that encourage environmentally conscious behaviour (Steg & Vlek, 2009). Therefore, personal norms are greatly influenced by increased awareness of the consequences of food waste. Consequently, the following hypothesis is proposed:

H1: Awareness of consequences positively influence personal norms regarding the reduction of vegetable and fruit waste in Lithuania

As people who believe they are responsible for the environmental effects of their actions are more inclined to engage in waste-reducing behaviours, assigning responsibility has a significant impact on personal norms in terms of minimizing vegetable and fruit waste (Schultz, 2001; Vicente & Reis, 2008). Studies highlight the fact that when people own up to their part in the trash problem, they are more likely to set and adhere to personal standards that put sustainability and efficient waste management first (De Groot & Steg, 2009; Bolderdijk et al., 2012). Furthermore, accepting accountability for one's actions might boost the desire to implement waste-reducing behaviours including recycling, composting, and cautious meal planning (Bamberg & Möser, 2007). Therefore, emphasizing personal accountability is essential to developing a person's goal to reduce their environmental impact by reducing waste. Hence, the following hypothesis is proposed:

H2: Ascription of responsibility positively influences personal norms regarding the reduction of vegetable and fruit waste in Lithuania

Personal norms have a beneficial influence on intentions to minimize vegetable and fruit waste, as people who believe in strong moral commitments to sustainability are more motivated to practice waste-reducing behaviours (Guan & Qian, 2023; Jingjing Wang et al., 2022). According to the studies, personal norms drive proactive behaviours such as composting, recycling, and conscious consumption, connecting personal convictions to environmental action (Thøgersen, 2006; Ma et al., 2023). These internalized moral standards are crucial in integrating awareness of consequences and capability into sustainable activities, highlighting the effect of personal norms

on the intention to reduce food waste (Bright Obuobi et al., 2023; Wu et al., 2023). Consequently, the following hypothesis is proposed:

H3: Personal norms positively influence intentions to reduce vegetable and fruit waste in Lithuania

Favourable views and beliefs about sustainability and responsible consumption encourage people to participate in waste-reduction activities, and positive attitudes toward reducing vegetable and fruit waste have a considerable impact on intentions to minimize such waste (Ajzen, 1991; Thøgersen, 2006). Studies have indicated that when people have a positive attitude toward waste reduction and environmental conservation, they are more likely to prioritize actions that are consistent with these values. These activities include meal planning, composting, and waste-reducing purchases (Graham-Rowe et al., 2014; Bredahl, 2001). Furthermore, positive perspectives can increase the personal importance of waste reduction, which in turn increases the likelihood of long-term behavioural changes (Parfitt et al., 2010; Peattie, 2010). As a result, cultivating a positive mindset is necessary to motivate people to commit to reducing waste. As a result, encouraging people to commit to cutting waste requires positive attitude cultivation. Accordingly, the following hypothesis is proposed:

H4: Attitudes towards reducing vegetable and fruit waste positively influence intentions to reduce waste in Lithuania.

Social standards have a significant impact on how people intend to reduce the wastage of fruits and vegetables. Because we are social creatures, it is in our nature to follow the standards and expectations set by the groups to which we belong (Cialdini, 2003; Ajzen, 1991). Several studies have demonstrated that people are more likely to take up waste-reducing behaviours when they witness other people doing so: friends, family, or neighbours (Goldstein et al., 2008; Shin et al., 2018). Moreover, people feel more personally committed to waste-reducing measures when they think that their social groups not only accept them but also support these behaviours (Melnyk et al., 2019; Pallas et al., 2014). In communities or cultures where environmental practices is a shared value, subjective norms have a particularly potent effect that motivates people to make more sustainable choices which is reducing food waste. As a result, the following hypothesis is proposed:

H5: Subjective norms positively influence intentions to reduce vegetable and fruit waste in Lithuania

Perceived behavioural control has a significant influence on intentions to limit vegetable and fruit waste because individuals who feel they have the knowledge and resources to manage their

waste are more likely to take steps that effectively reduce waste (Ajzen, 1991; Armitage and Conner, 2001). Research has shown that people's intention to reduce trash increases when they believe they have control over their activities, such as having access to recycling facilities or knowing how to compost (Martin-Rios et al., 2022; Ertz et al., 2017). Furthermore, limitations like a lack of resources or time can be lessened by perceived behavioural control, allowing for more reliable and successful waste-reduction practices (Quested et al., 2013; Pakpour et al., 2014). As a result, giving people the information, abilities, and resources they need to manage their waste can greatly increase their motivation and capacity to adopt sustainable behaviours. Therefore, the following hypothesis is proposed:

H6: Greater perceived behavioural control over food management practices is positively associated with the intention to reduce fruit and vegetable waste in Lithuania.

Because it elicits an emotional reaction related to the possible repercussions of wasteful activity, anticipatory guilt is a powerful motivator for people to adopt waste-reducing behaviours (Onwezen et al., 2013; Culiberg et al., 2022). According to studies, intentions to reduce waste are highly influenced by the expectation of feeling bad for wasting food. To avoid the emotional discomfort of guilt, efforts like recycling and composting are encouraged (Stancu et al., 2016; Turner et al., 2023). Moreover, there is a correlation between anticipated guilt and increased compliance with social norms that prohibit wasteful behaviour (Soorani & Sepaskhah, 2019). In situations where the cultural and social environment prioritizes sustainability and ethical consumerism, this emotional driver is especially important for forming environmentally conscious behaviour (Rosenthal & Yu, 2022; Attiq et al., 2021). Based on this, the following hypothesis was proposed:
H7: Anticipated guilt positively influences the intentions to reduce vegetable and fruit waste in Lithuania

To summarize this section, the fundamental goal of this thesis is to experimentally study and quantify the influence of psychological factors on intentions to reduce vegetable and fruit waste in Lithuania. The research model takes into account a variety of psychological and social variables, including anticipated guilt, awareness of consequences, ascription of responsibility, attitudes toward waste reduction, perceived behavioural control, subjective norms, and personal norms. It is suggested that greater psychological engagement, such as heightened anticipated guilt significantly enhances motivation to minimize waste, based on the hypotheses presented and the full study model. People are influenced by social and personal norms as well as their perception of their ability to change things and their awareness of how their actions affect their

surroundings. The pathway is influenced by an individual's personal views about trash reduction and how successful they believe their efforts to be in promoting environmental sustainability. Furthermore, people are more likely to adopt sustainable activities when they place a higher priority on waste reduction. Conducting experiments on these variables and hypotheses will advance the area of environmental psychology and have useful tips for home food waste reduction tactics. In the next section of the research methodology part, data collection methods, study design, measurement of variables, and the selection of service, respondents, and size are provided.

2.2. Organization and instrument of the research

In order to test and explore the proposed research model and hypotheses, a quantitative research method was applied. According to research, quantitative approaches are very useful for analysing the connections between psychological variables and actions that support environmental sustainability, like cutting down on food waste from fruits and vegetables in homes (Graham-Rowe et al., 2014; Barr et al., 2010). The most popular methods for collecting information on people's attitudes, and behaviours around food waste are surveys and questionnaires (Thøgersen, 2006; Quested et al., 2013; Attiq et al., 2021). The research will employ a structured questionnaire designed to assess various psychological constructs that influence waste reduction behaviours, such as personal norms, perceived behavioural control, subjective norms, awareness of consequences and ascription of responsibility. These constructs have been selected based on their recurring significance in related studies and their relevance to the study's objectives (Schwartz & Howard, 1981; Ajzen, 1991; Klöckner, 2013).

The questions are divided into 8 sections and contain statements about psychological factors, attitudes, personal norms, subjective norms, and sociodemographic background. The survey in most cases used a five-point Likert scale ranging from "strongly agree" (7 points) to "strongly disagree" (1 point), with additional responses. The informed consent form, which details the goals of the study, the voluntary nature of the survey, the respondent's right to withdraw from the study at any time, and the confidentiality of the data collected, will be available for reading and signing before the respondent is asked to answer some questions. Data were collected using Google Forms with a questionnaire from September till the end of November 2024. The questionnaire was developed in English, and distributed to Lithuanian respondents through e-mail and other social media platforms including Instagram. A link was sent to potential respondents and they were asked to forward it to friends and acquaintances. The data was downloaded in an Excel file, and respondents who did not finish the questionnaire were eliminated. Likert-scale items and open-ended questions will be combined to provide

comprehensive information on participants' motivations and behaviours. Regression analyses and hypothesis testing will be conducted on the gathered data using the IBM SPSS statistical program. With the use of this technique, it will be possible to determine the relevance and strength of the associations between psychological variables and household intentions to decrease the waste of fruits and vegetables. The study intends to provide solid results to the field of environmental psychology and useful insights into tactics for encouraging environmentally friendly waste management habits in homes by utilizing these quantitative methodologies.

2.3. Selection of respondents and sample characteristics

For this investigation, people in Lithuania between the ages of 17 to 50 years old have been chosen as the research population. When discussing the selection of Lithuania as the study's focus, it is crucial to make clear that logistical factors had a major role in the decision. Living in Lithuania gives researchers a unique opportunity to watch and study behaviours in a sociocultural setting they are familiar with, in addition to direct access to the population for data gathering. This knowledge is essential for creating sophisticated data gathering tools and analysing findings with a more thorough comprehension of regional attitudes and practices. Furthermore, Lithuania's unique cultural, economic, and historical background makes it an intriguing case study for the psychological constructs in question. This background may also affect how broadly applicable and generalizable the findings are in post-Soviet or similar transitional economies.

It is crucial to determine an appropriate sample size to ensure the research is representative and to minimize bias, thereby enhancing the reliability and validity of the findings. This necessity is underscored by insights into consumer behaviour and environmental awareness where larger sample sizes are necessary to ensure sufficient statistical power and reduce the risk of sampling errors (Forbes et al., 2021; Guan & Qian, 2023). These works highlight the importance of robust sample frameworks in quantitative research, particularly when exploring complex interactions between psychological factors and environmentally significant behaviours. To calculate the required sample size, a method involving comparison with similar studies outlined in the literature review was employed. This method ensures that the sample size is sufficient to generate reliable data, drawing on the proven effectiveness of past studies' methodologies and sample sizes. To calculate the sample size, comparable researches method was applied (see Table 1) using authors who were used to create the research model. Based on past research, the required minimum sample size is n = 122. Based on these values, the **average sample size** is approximately 271.

Table 1

Sample size calculation

No.	Author, date	Type of methods applied	No. of respondents
1	Attiq et al. (2013)	Structured survey	515
2	Aydin et al. (2021)	Web-based survey	339
3	Bhatti et al. (2019)	Web-based questionnaire	250
4	T'ing et al. (2021)	Self-administered survey questionnaires	352
5	Sung et al. (2019)	Questionnaire	122
6	Han et al. (2016)	Questionnaire	321
		Total	271

Source: compiled by the author.

This study will utilize a non-probability, convenience sampling method to recruit respondents. This strategy is chosen due to the practical constraints of time and resources and the accessibility of the target population through various channels such as email lists, social media platforms. This sampling approach will facilitate efficient data collection and ensure a diverse sample from different ages and average income, thereby capturing a broad spectrum of views on the factors influencing waste reduction behaviours among Lithuanian people. By carefully selecting the respondents and determining an appropriate sample size, this study aims to robustly explore the psychological factors that influence the intentions of university students to reduce their vegetable and fruit waste, contributing valuable insights to the field of environmental psychology.

Table 2

Statements for questionnaire

№	Construct	Statement	Author

1	Awareness of Consequences	AOC1: Reducing food wastage benefits everyone. AOC2: Reducing food wastage will help to improve the quality of life for everyone. AOC3: Reducing food wastage will create a better world for me and my family. AOC4: Degradation of the environment due to food wastage directly affects my health. (i.e. Greenhouse gas) AOC5: Food wastage caused in my country will often affect people in other parts of the world. (i.e. It could contribute to serious problems in other countries such as Starvation in Afrika, low food supply in India etc.)	Bronfman et al. (2015)
2	Ascription of Responsibility	AOR1: Every person is responsible to reduce food wastage. AOR2: All Lithuanians are responsible to reduce the amount of food wastage. AOR3: All households are responsible for reducing food wastage. AOR4: I am willing to reduce food wastage even though others do not do the same	T'ing et al. (2021)
3	Attitude	Att1: Reducing food waste will have a positive effect on environmental protection. Att2: Reducing food waste is helping to improve the quality of life. Att3: Reducing food waste is a wise move.	Pandey et al. (2023)

4	Personal Norms	PN1: I feel guilty/bad when I throw away food because some people don't have enough to eat. PN2: I would be a better person if I do not waste food/zero-waste person. PN3: I feel disturbed by the amount of food being wasted since it takes a lot of resources to grow, process, package and transport food. PN4: I feel obliged to reduce food wastage into consideration when I make food or grocery choices. PN5: If I buy food, I feel morally obliged not to waste it. PN6: I feel morally obliged to reduce food wastage regardless of what others thinking.	De Groot and Steg (2009)
5	Subjective Norms	SN1: Most people who are important to me believe that I should reduce food wastage. SN2: People often ask me to reduce food wastage. SN3: It is expected of me to reduce food wastage. SN4: I feel under social pressure to reduce food wastage. SN5: People who are similar to me reduce food wastage.	T'ing et al. (2021)
6	Perceived Behavioural Control	PBC1: I find it easy to prepare new meals from the leftover foods.	Visschers et al., (2016)

		PBC2: I find it easy to make sure that only very small amount of food is discarded in my household. PBC3: I find it easy to plan my food shopping in such a way that all the food I purchase is eaten. PBC4: I have the feeling that I can do something about the food that I waste. PBC5: People around me make it possible for me to reduce the amount of food wastage.	
7	Anticipated Guilt	ANG1: I feel guilty when I waste household food as it has an adverse effect on the environment ANG2: I feel guilty when I waste household food as it has severe negative implications for the economy ANG3: I feel guilty when I waste household food as it has severe negative implications for society ANG4: I feel ashamed when I waste household food as it has a negative impact on our environment	Attiq et al. (2021)
8	Intentions to reduce vegetable and fruit waste	INT1: I am willing to go out of my way to reduce food wastage. INT2: My personal goal is to reduce as much food wastage as possible. INT3: I will make every effort to produce only very little food waste. INT4: I have seriously thought of using all food leftovers. INT5: I have a firm intention to reduce food wastage in the future.	Leko (2014)

Source: compiled by the author.

3. IMPACT OF PSYCHOLOGICAL FACTORS ON INTENTION TO REDUCE VEGETABLE AND FRUIT WASTE

3.1. Sociodemographic characteristics

Data analysis for the current model was carried in four steps. In the first step, a test for descriptive statistics was performed. In the second step, reliability test was performed for each variable. Regression analysis was used in the third step to determine the factors that predicted behavioural intents and personal norms. This involved investigating the connections among perceived behavioural control, attitudes, subjective norms, ascription of responsibility, awareness of consequences, and anticipated guilt. In order to find any group differences, the fourth and last phase involved using ANOVA tests to examine how demographic factors like age, gender, and income affected the measured constructs.

A total of 271 Lithuanian respondents participated in the survey. The demographic characteristics of the respondents are shown in Table 3. With 49.8% of respondents being female and 48.7% being male, the participant demographics show a virtually equal gender distribution. Additionally, 1.5% of respondents chose not to declare their gender. The age group of 21 to 30 accounts for the largest percentage of participants (57.9%), with lesser proportions of other age groups. With 34.7% of students reporting full-time employment and 14.0% reporting unemployment, students' employment status varied greatly, indicating a range of occupational backgrounds.

Table 3

Sociodemographic statistics

	Frequency	Percent
Gender		
Female	135	49,8
Male	132	48,7
Prefer not to say	4	1,5
Age		
17-20	43	15,9
21-30	157	57,9
31-40	43	15,9
41-50	28	10,3

Employment		
Full time employed	94	34,7
Full time employed, Student	41	15,1
Other	4	1,5
Part-time employed	12	4,4
Part-time employed, Self-employed	2	0,7
Part-time employed, Student	16	5,9
Self-employed	13	4,8
Student	28	10,3
Student, Other	1	0,4
Student, Self-employed	13	4,8
Unemployed	9	3,3
Unemployed, Student	38	14,0
Average income in EUROS per month		
Up to 500	43	15,9
501-700	38	14,0
701-900	27	10,0
901-1200	39	14,4
1201-1500	54	19,9
1501-2000	28	10,3
2001 and more	26	9,6
Prefer not to say	16	5,9

Source: compiled by the author.

3.2. Descriptive analysis and reliability and validity of constructs

The Central Limit Theorem, which supports treating the data as normally distributed for analysis, can be applied because the sample size of 271 is sufficiently large ($n > 30$). The Shapiro-Wilk and Kolmogorov-Smirnov tests were used to check for normality; the results are shown in Table 4. The robustness of the parametric tests employed in this investigation is supported by the high sample size, which reduces the impact of the deviations from perfect normalcy, even if the significance values for all variables were less than 0.05.

Table 4

Tests of Normality

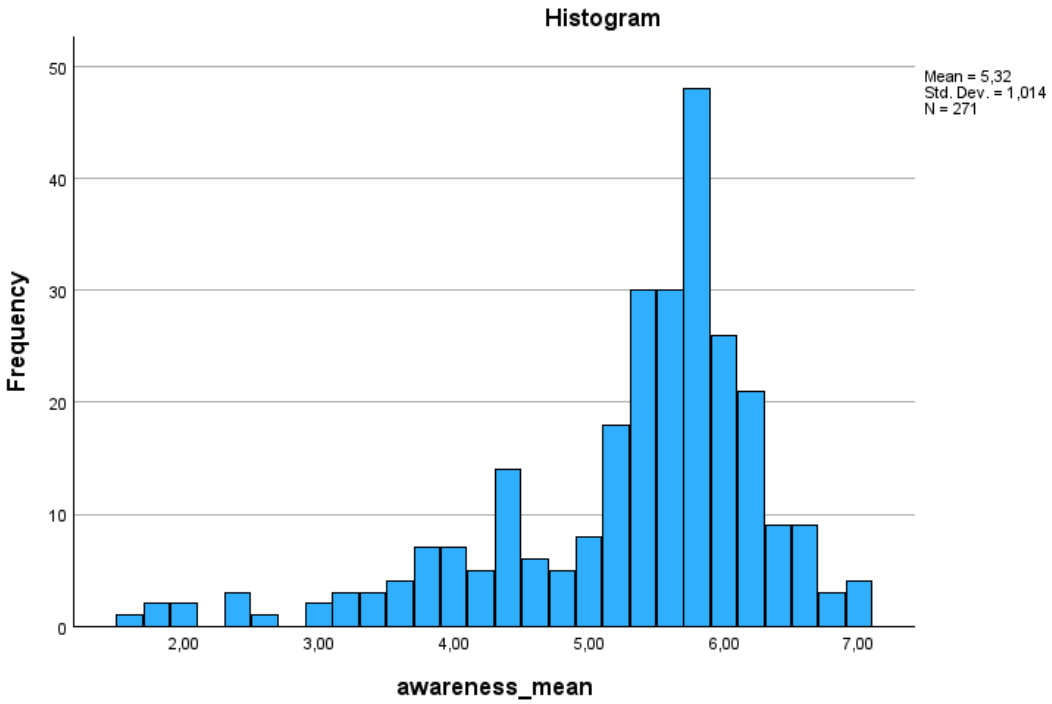
Variable	Kolmogorov-Smirnov	Sig.	Shapiro-Wilk	Sig.
Awareness of Consequences	0.196	<0.001	0.885	<0.001
Ascription of Responsibility	0.215	<0.001	0.882	<0.001
Attitude	0.173	<0.001	0.901	<0.001
Personal Norms	0.168	<0.001	0.899	<0.001
Subjective Norms	0.185	<0.001	0.912	<0.001
Perceived Behavioural Control	0.206	<0.001	0.877	<0.001
Anticipated Guilt	0.196	<0.001	0.889	<0.001
Intention to reduce vegetable and fruit waste	0.174	<0.001	0.912	<0.001

Source: compiled by the author.

The awareness of consequences mean variable's histogram displays a distribution with a standard deviation of 1.014 and a mean score of 5.32 at its centre point. This distribution seems to be slightly tilted to the left, suggesting that most respondents are more conscious of the need to reduce the waste of fruits and vegetables. Although there is still opportunity to raise awareness to the highest level, the concentration of responses between 5 and 6 indicates that a sizable majority of the sample recognizes the significance of waste reduction (7).

Figure 5

Awareness of Consequences distribution histogram

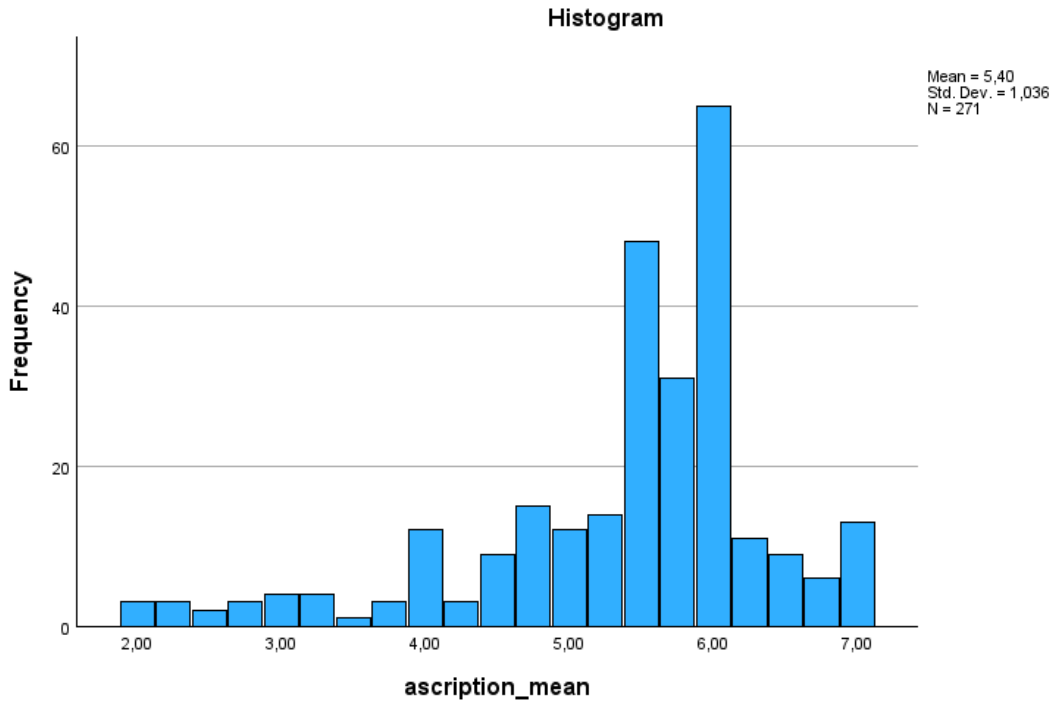


Source: compiled by the author.

The distribution with a mean of 5.40 and a standard deviation of 1.036 is shown by the histogram for the ascription of responsibility variable. The mode, which falls between 6 and 7, is where this distribution is most concentrated, suggesting that most respondents accept personal accountability for cutting waste. The apex of the distribution indicates that most participants strongly attribute culpability.

Figure 6

Ascription of Responsibility distribution histogram

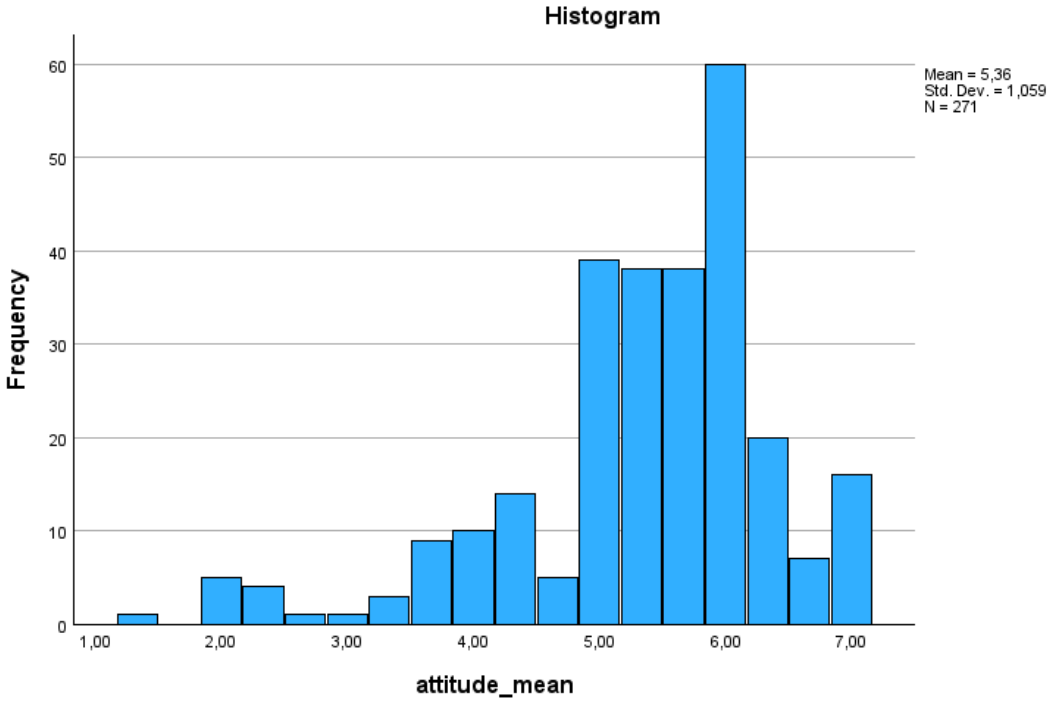


Source: compiled by the author.

The attitude mean histogram shows a standard deviation of 1.059 and a mean value of 5.36. A generally positive attitude toward waste reduction initiatives is suggested by the distribution's central peak, which occurs around 6. However, the distribution's wide range indicates that respondents' opinions regarding the value or effectiveness of proactive waste management practices vary.

Figure 7

Attitude distribution histogram

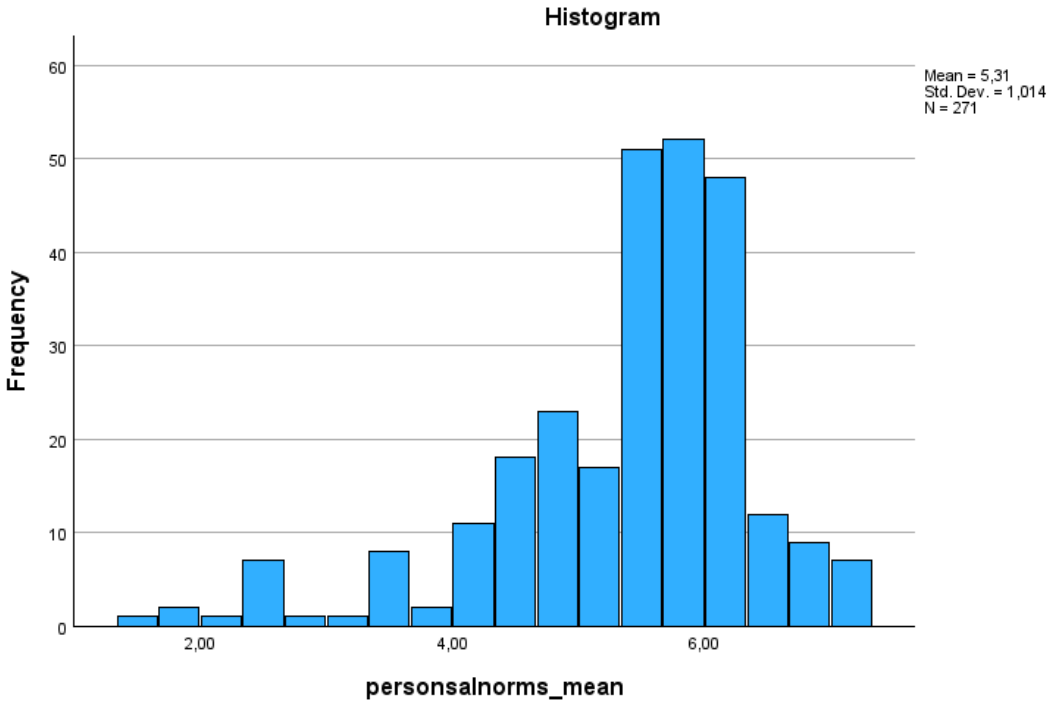


Source: compiled by the author.

With a standard deviation of 1.014 and a mean value of 5.31, the personal norms mean histogram peaks around this number. With a concentration of about 6, the distribution is noticeably biased towards higher values. This implies that people have a high personal obligation or standard to cut down on the waste of fruits and vegetables.

Figure 8

Personal norms distribution histogram

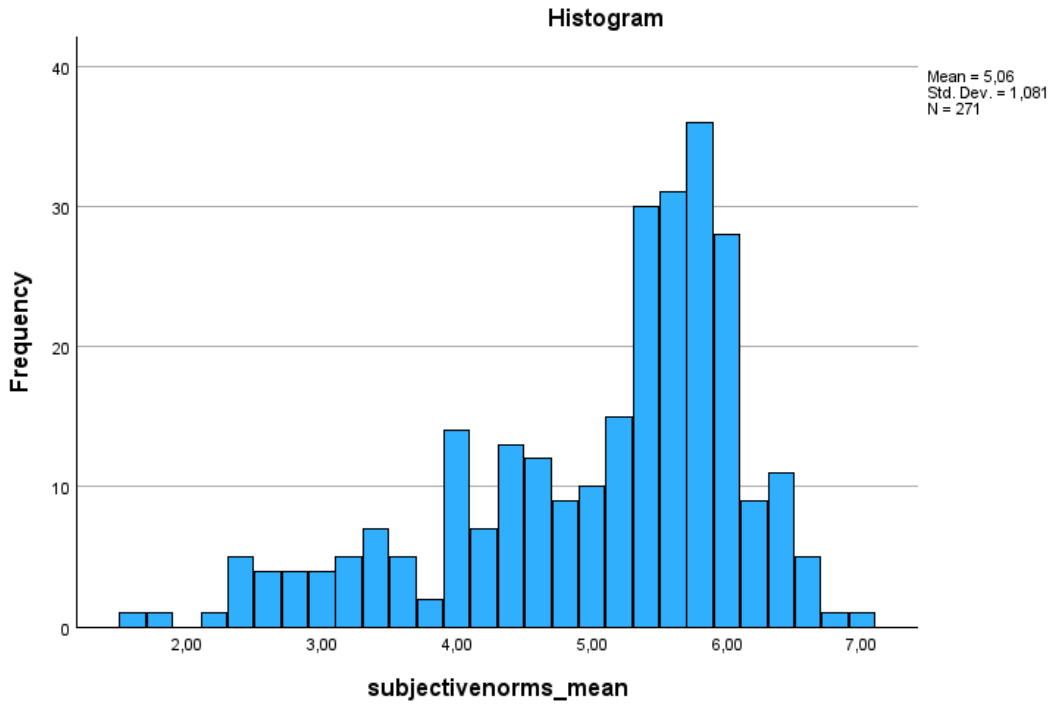


Source: compiled by the author.

There is a mean of 5.06 and a standard deviation of 1.081 according to the subjective norms mean histogram. The distribution shows variation in how people view society expectations for waste reduction, peaking around the mean but spanning a large range.

Figure 9

Subjective norms distribution histogram

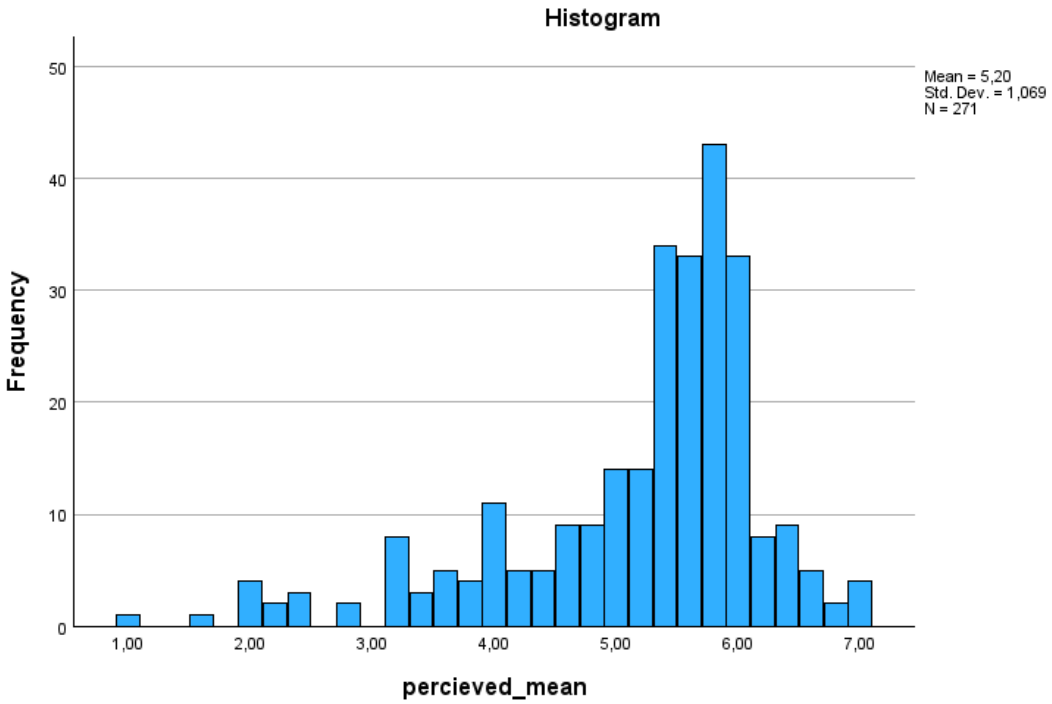


Source: compiled by the author.

With the highest frequencies occurring around 5 and 6, the perceived control histogram shows a mean of 5.20 and a standard deviation of 1.069. This implies that people have a moderate level of confidence in their capacity to affect waste reduction.

Figure 10

Perceived behavioural control distribution histogram

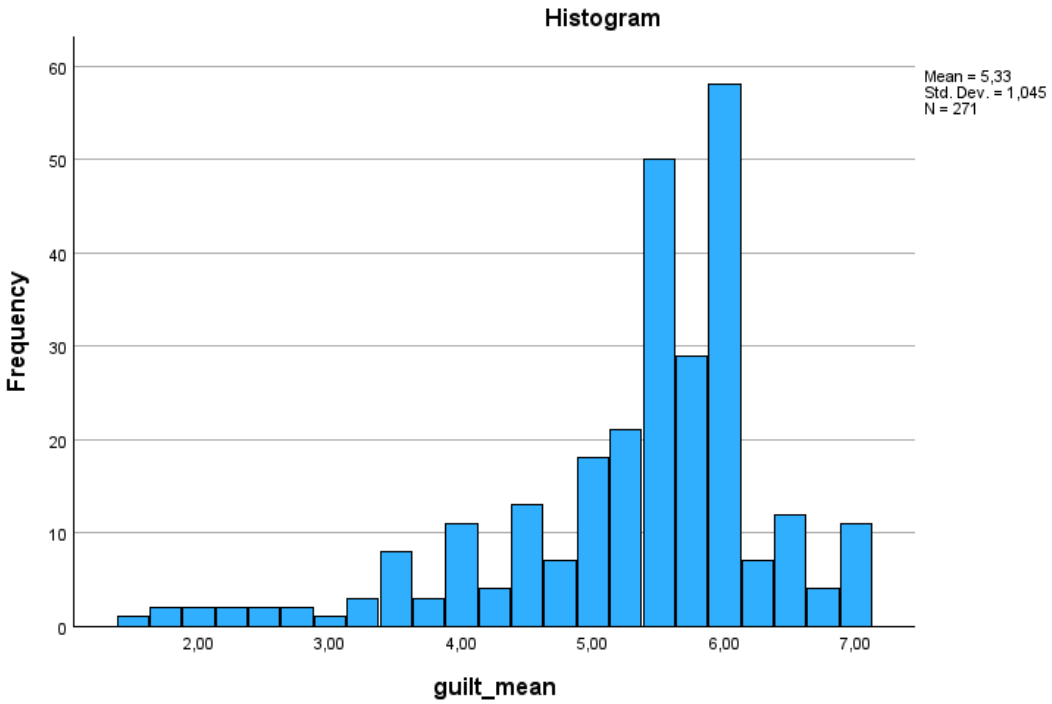


Source: compiled by the author.

With a mean of 5.33 and a standard deviation of 1.045, the anticipated guilt histogram displays a distribution. The data is highly concentrated between 5 and 6, suggesting that anticipated guilt is a major motivator for people to reduce waste.

Figure 11

Anticipated guilt distribution histogram

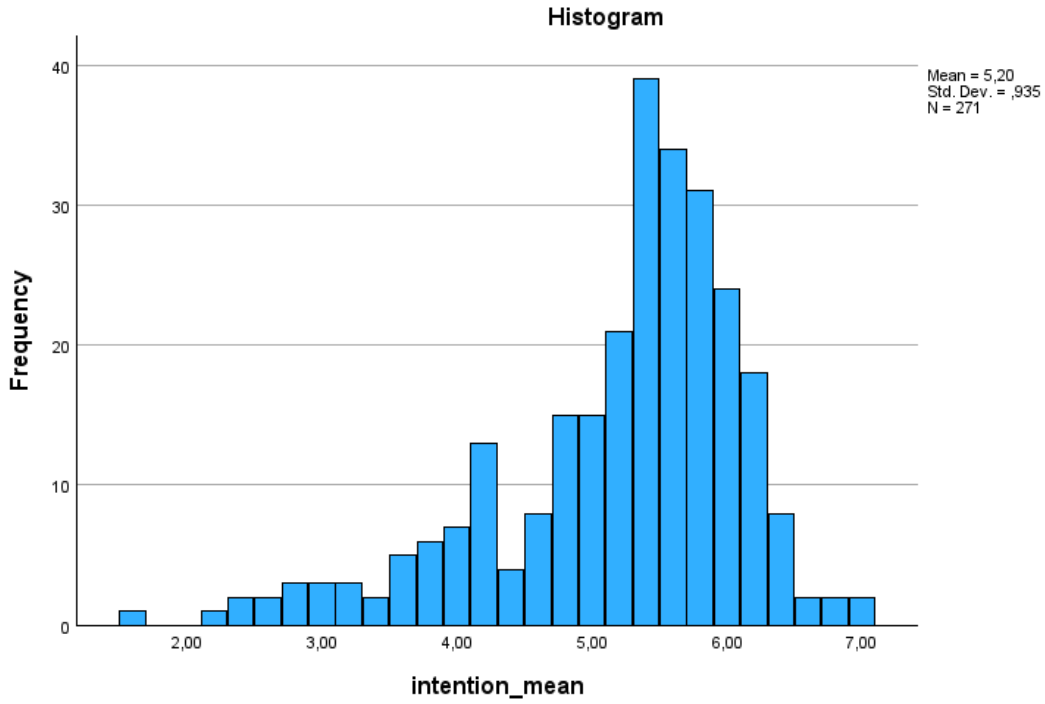


Source: compiled by the author.

With a mean value of 5.20 and a standard deviation of 0.935, the distribution of intention to reduce vegetable and fruit waste exhibits a generally normal distribution. The majority of respondents show a relatively high intention to engage in waste reduction practices, as indicated by the most commonly occurring values clustering between 4.5 and 6.

Figure 12

Intention to reduce vegetable and fruit waste distribution histogram



Source: compiled by the author.

These histograms offer a thorough understanding of the psychological elements influencing people's waste reduction practices. We can gain a better understanding of the mechanisms at work in encouraging people to adopt sustainable behaviours by examining the distribution of awareness of consequences, ascription of responsibility, attitude, personal norms, subjective norms, perceived control, anticipated guilt, and intention. In addition to providing information on the present status of these variables, each histogram directs the strategic course of community programs and legislative efforts meant to improve the reduction of waste from fruits and vegetables.

Descriptive analysis and reliability and validity of constructs are shown in Table 5. Participants' perceptions and the consistency of the measuring scales are revealed by the descriptive statistics and reliability analysis for the constructs. All items showed moderate to high levels of agreement, with mean scores for the constructs ranging from 5.06 (Subjective Norms) to 5.41 (Ascription of Responsibility). Reasonable response diversity was shown by the standard deviations, which ranged from 1.054 (Intentions to Reduce Vegetable and Fruit Waste) to 1.32

(Anticipated Guilt).

All constructs showed good to outstanding internal consistency according to reliability analysis using Cronbach's Alpha, with values ranging from 0.754 (Intentions to Reduce Vegetable and Fruit Waste) to 0.879 (Personal Norms). These findings attest to the measurement tools' accuracy in identifying the desired psychological constructs.

While lower scores, such Subjective Norms (M = 5.06, SD = 1.081), emphasize comparatively less influence, higher means, like Ascription of Responsibility (M = 5.41, SD = 1.036), indicate better participant agreement.

According to these results, the scales measure the constructs well and offer a strong basis for assessing the psychological aspects affecting participants' aspirations to cut back on fruit and vegetable waste. Descriptive statistics and reliability evaluations work together to guarantee that the constructs are appropriate for interpretation and hypothesis testing.

Table 5

Descriptive Statistics and Reliability of Constructs

Construct	Statements	Mean (M)	Standard Deviation (SD)	Cronbach's Alpha
Awareness of Consequences	AOC1 AOC2 AOC3 AOC4 AOC5	5,33	1,014	0,835
Ascription of Responsibility	AOR1 AOR2 AOR3 AOR4	5,41	1,036	0,825
Attitude	Att1 Att2 Att3	5,36	1,059	0,808
Personal Norms	PN1 PN2 PN3 PN4 PN5 PN6	5,31	1,014	0,879

Subjective Norms	SN1 SN2 SN3 SN4 SN5	5,06	1,081	0,868
Perceived Behavioural Control	PBC1 PBC2 PBC3 PBC4 PBC5	5,20	1,069	0,865
Anticipated Guilt	ANG1 ANG2 ANG3 ANG4	5,33	1,045	0,808
Intentions to reduce vegetable and fruit waste	INT1 INT2 INT3 INT4 INT5	5,20	0,935	0,754

Source: compiled by the author.

3.3. Hypothesis testing

The seven hypotheses created for the study are assessed in this part. Regression and ANOVA analyses were used to evaluate the hypotheses; the tables below provide a summary of the findings. At the 1% level, all predicted associations were determined to be statistically significant ($p<0.01$).

H1: Awareness of consequences positively influences personal norms regarding the reduction of vegetable and fruit waste in Lithuania.

The Personal Norms variable is strongly impacted by Awareness of Consequences, according to the regression analysis, which showed $R2 = 0.299$, $F(1, 269) = 114.948$, and $B = 0.547$, $t(269) = 10.721$, $p < 0.001$. These results validate Hypothesis 1 by confirming a strong and favourable influence.

H2: Ascription of responsibility positively influences personal norms regarding the reduction of vegetable and fruit waste in Lithuania.

The findings of the regression show a substantial positive relationship between ascription of responsibility and personal norms: $R2 = 0.356$ and $B = 0.584$, $t(269) = 12.204$, $p < 0.001$. The second hypothesis is verified.

H3: Personal norms positively influence intentions to reduce vegetable and fruit waste in Lithuania.

$R2 = 0.492$, $F(1, 269) = 260.322$, $p < 0.001$, and $B = 0.647$, $t(269) = 16.134$, $p < 0.001$ were the results of the regression analysis, which amply demonstrated a positive effect of personal norms on intention to reduce fruit and vegetable waste and validated the hypothesis. The fourth Hypothesis has been verified.

H4: Attitudes towards reducing vegetable and fruit waste positively influence intentions to reduce waste in Lithuania.

The results of the regression analysis, which analysed the influence of attitude on intention to reduce fruit and vegetable waste, show a strong influence: $R2 = 0.524$, $F(1, 269) = 295.828$, $p < 0.001$, and $B = 0.639$, $t(269) = 17.200$, $p < 0.001$. These findings support a strong and positive influence, hence validating Hypothesis 3.

H5: Subjective norms positively influence intentions to reduce vegetable and fruit waste in Lithuania.

Subjective norms positively influence intentions to reduce vegetable and fruit waste in Lithuania, which is substantially confirmed by the regression results, which show that $R2 = 0.556$, $F(1, 269) = 337.444$, $p < 0.001$, and $B = 0.645$, $t(269) = 18.370$, $p < 0.001$. So Hypothesis 5 is accepted.

H6: Greater perceived behavioural control over food management practices is positively associated with reducing fruit and vegetable waste in Lithuania.

The research demonstrates a strong positive correlation between intention to reduce fruit and vegetable waste and perceived behavioural control, with $R2 = 0.645$, $F(1, 269) = 487.817$, $p < 0.001$, and $B = 0.703$, $p < 0.001$. That is why Hypothesis 6 is confirmed.

H7: Anticipated guilt positively influences the intentions to reduce vegetable and fruit waste in Lithuania

Lastly, the influence of anticipated guilt on intention to reduce fruit and vegetable waste is supported by the regression analysis results, $R2 = 0.577$, $p < 0.001$, and $B = 0.680$, $t(269) = 19.163$, $p < 0.001$. These results validate Hypothesis 7 by confirming a strong and favourable influence.

Therefore, all the hypotheses were empirically supported, offering solid proof that the suggested model is a good way to explain how behavioural intentions to reduce the waste of fruits and vegetables are influenced by psychological considerations. (See Table 6).

Table 6

Hypotheses and Testing Results

Hypothesis	Relationships	R^2	F	*B*	t	Sig.	Confirmed/rejected
H1	AOC - > PN	0,299	114.948	0.547	10.721	<0.001	Confirmed
H2	AOR- > PN	0,356	148,946	0.584	12.204	<0.001	Confirmed
H3	PN- > INT	0,492	260,322	0.647	16.134	<0.001	Confirmed
H4	Att- > INT	0,524	295,828	0.639	17.200	<0.001	Confirmed
H5	SN - > INT	0,556	337,444	0.645	18.370	<0.001	Confirmed
H6	PBC - > INT	0,645	487,817	0.703	22.087	<0.001	Confirmed
H7	ANG - > INT	0,577	367,204	0.680	19.163	<0.001	Confirmed

Source: compiled by the author.

3.4. Influence of gender, age and income on psychological constructs

One-way ANOVA tests were used to investigate how gender, age and income affected psychological dimensions.

Three groups were included in the gender variable: Prefer not to say (1.5%), Male (48.7%), and Female (49.8%). Awareness of consequences, ascription of responsibility, attitudes, subjective and personal norms, perceived behavioural control, anticipated guilt, and behavioural intention were among the constructs examined. Table 7 presents the findings. Across all investigated constructs, the analyses revealed no statistically significant differences between gender groups ($p>0.05$). Certain dimensions, like anticipated guilt ($F=1.976, p=0.141$) and awareness of consequences ($F=2.177, p=0.115$), had marginally higher F-values but fell short of the statistical significance criterion. Furthermore, the small effect sizes (Eta-squared values) confirm the lack of meaningful differences. These findings imply that the psychological variables associated with waste reduction aspirations in this population are not substantially influenced by gender.

Table 7

ANOVA Results for Gender Differences

Construct	F	Sig.	Eta-squared	Gender Groups (1 = Female, 2 =

				Male, 3 = Prefer not to say)
Awareness of Consequences	2.177	0.115	0.016	No significant differences
Ascription of Responsibility	0.869	0.421	0.006	No significant differences
Attitudes	0.943	0.391	0.007	No significant differences
Personal Norms	0.312	0.732	0.002	No significant differences
Subjective Norms	1.090	0.338	0.008	No significant differences
Perceived Behavioural Control	0.792	0.454	0.006	No significant differences
Anticipated Guilt	1.976	0.141	0.015	No significant differences
Intention to reduce food waste	0.770	0.464	0.006	No significant differences

Source: compiled by the author.

One-way ANOVA tests were used to evaluate the impact of age on psychological variables. The results are shown in Table 8. The age variable was divided into four groups: 17–20 (15.9%), 21–30 (57.9%), 31–40 (15.9%), and 41–50 (10.3%). Significant differences were found between age groups in attitudes ($F=5.704, p<0.001$), ascription of responsibility ($F=6.330, p<0.001$), and awareness of consequences ($F=5.169, p=0.002$). Younger groups (17–30 years) demonstrated higher scores on these constructs compared to older groups (31–50 years). Medium effect sizes were indicated by eta-squared values for these constructs, which varied from 0.055 to 0.066. Nevertheless, there were no statistically significant differences ($p>0.05$) across age groups in behavioural intention, perceived behavioural control, anticipated guilt, subjective norms, or personal norms.

Table 8

ANOVA Results for Age Differences

Construct	F	Sig.	Eta-squared	Age Groups (1 = 17–20, 2 = 21–30, 3 = 31–40, 4 = 41–50)
Awareness of Consequences	5.169	0.002	0.055	Significant differences
Ascription of Responsibility	6.330	<0.001	0.066	Significant differences
Attitudes	5.704	<0.001	0.060	Significant differences
Personal Norms	1.932	0.125	0.021	No significant differences
Subjective Norms	1.707	0.166	0.019	No significant differences
Perceived Behavioural Control	2.583	0.054	0.028	Marginally significant
Anticipated Guilt	2.374	0.071	0.026	No significant differences
Intention to reduce food waste	2.347	0.073	0.026	No significant differences

Source: compiled by the author.

One-way ANOVA tests were used to evaluate the impact of wealth on psychological variables. Eight categories were identified based on the income variable: up to 500 (15,9%), 501-700 (38,14%), 701-900 (10%), 901-1200 (14,4%), 1201-1500 (19,9%), 1501-2000 (10,3%), 2001 and more (9,6%), and prefer not to say (5,9%). The results presented in table 9. There were no statistically significant differences between income groups for any of the constructs, which included awareness of consequences, ascription of responsibility, attitudes, personal norms, subjective norms, perceived behavioural control, anticipated guilt, and behavioural intention. All of these constructs had p-values greater than 0.05. This suggests that people from various socioeconomic backgrounds have comparable psychological characteristics with regard to these concepts.

Table 9

ANOVA Results for Income Differences

Construct	F	Sig.	Eta-squared	Income Group: (1 = up to 500, 2 = 501-700, 3 = 701-900, 4 = 901-1200, 5 = 1201-1500, 6 = 1501-2000, 7 = 2001 and more, 8 = prefer not to say)
Awareness of Consequences	1.230	0.286	0.032	No significant differences
Ascription of Responsibility	1.004	0.429	0.026	No significant differences
Attitudes	0.578	0.773	0.015	No significant differences
Personal Norms	1.166	0.323	0.030	No significant differences
Subjective Norms	1.381	0.214	0.035	No significant differences
Perceived Behavioural Control	0.976	0.449	0.025	No significant differences
Anticipated Guilt	1.188	0.310	0.031	No significant differences
Intention to reduce food waste	0.848	0.548	0.022	No significant differences

Source: compiled by the author.

3.5. Practical implications for policy and education

This study supports the findings of Bhatti et al. (2019), which show how consumer views toward food waste are significantly influenced by environmental concerns. It recommends that in order to encourage consumers to reduce their trash, educators and policymakers should highlight the

advantages of the environment in their efforts. However, this research supports practical initiatives, such implementing instructional programs in universities and companies that directly target ways to reduce fruit and vegetable waste, in contrast to Leko et al. (2014), who discovered that students' purchases of green foods are primarily driven by their personal beliefs.

Unlike T'ing et al. (2021), who highlighted the impact of individual norms on waste reduction aspirations in Malaysia, our results indicate that public awareness campaigns and wider community engagement may be more important in Lithuania. In line with Kallgren et al.'s (2000) Focus Theory of Normative Conduct, which emphasizes the efficacy of subjective norms when they are actively promoted within the community, this encourages the implementation of visible, community-based waste reduction methods.

The significance of improving customers' self-efficacy through practical workshops and planning tools to enable efficient waste behaviours is also supported by this study, which concurs with Pandey et al. (2023). Our results also imply that programs to encourage recycling and upcycling could be successfully adopted in Lithuanian corporate and educational settings to minimize waste, building on the work of Sung et al. (2019).
By recommending a more decentralized approach in Lithuania, this study departs from Lin et al. (2021), who emphasized the significance of perceived government control in China. In order to promote a culture of waste reduction that is focused on the community, it suggests incorporating a variety of stakeholders, such as NGOs, nearby companies, and educational institutions.

Last but not least, this study emphasizes the need for an integrated strategy that combines community involvement, education, and policy, as supported by worldwide trends and research. This multifaceted approach is crucial for addressing fruit and vegetable waste in Lithuania, utilizing both contemporary digital platforms and the traditional Lithuanian love of nature to inspire and engage a wider audience.

CONCLUSIONS AND PROPOSALS

The psychological elements impacting Lithuanians' desire to cut down on fruit and vegetable waste have been carefully examined in this study.

1.A balanced perspective on aspirations to reduce vegetable and fruit waste across genders was suggested by the demographic breakdown, which revealed a virtually equal distribution between male (48.7%) and female (49.8%) participants. Younger people are largely involved in this study, as evidenced by the large percentage of participants (57.9%) who were in the 21–30 age range. This may be due to their greater interest in or understanding of trash reduction activities. With 34.7% of students working full-time and an intriguing mix of students working part-time or

not, employment status varied, indicating a range of economic origins that may have an impact on waste reduction practices (Table 3). Since younger and economically active groups are included in the study in substantial numbers, it may be possible to maximize the impact on waste reduction behaviour by designing educational and communication methods to target these groups. To ensure gender-balanced sustainability programs, actively engage the male population to increase their involvement and dedication to waste reduction activities. Utilize the high level of student and full-time employee engagement in waste reduction techniques by implementing focused interventions at firms and universities.

2. Even though the significant values for every variable were less than 0.05, the large sample size lessens the impact of the departures from perfect normalcy, supporting the robustness of the parametric tests used in this study. With Cronbach's alpha ratings of 0.835 and 0.825, respectively, constructs pertaining to awareness of consequences and attribution of responsibility demonstrated strong reliability, suggesting that these psychological aspects are robustly measured. Participants' awareness of the influence of their activities on waste reduction was typically high, as indicated by the mean Awareness of Consequences scores, which varied from 5.18 to 5.62. Enhancing public awareness campaigns on the negative effects of waste and using the validated constructs to track changes in public attitudes and behaviours over time are some of the recommendations. Create community-based initiatives that, with the help of the ascription pf responsibility construct's high reliability, encourage a sense of individual accountability for waste reduction.

3. The predictive ability of the theoretical model employed was demonstrated by the support of all seven hypotheses pertaining to the impact of psychological factors on personal norms and intentions to reduce vegetable and fruit waste in Lithuania (Table 6). Particularly for perceived behavioural control (R^2- 0,645) and anticipated guilt (R^2- 0,577), significant associations were discovered that influenced intentions to effectively minimize waste. Based on the findings, it was suggested that in order to improve waste reduction efforts, educational interventions and useful community activities should concentrate on enhancing personal norms and perceived behavioural control. Make use of the results of the hypothesis testing to promote policy modifications that encourage the construction of infrastructures that improve citizens' ability to manage their behaviour.

4. To examine the effects of income, age, and gender on psychological characteristics, one-way ANOVA tests were employed. Only attitudes ($F=5.704, p<0.001$), ascription of responsibility ($F=6.330, p<0.001$), and understanding of consequences ($F=5.169, p<0.002$) showed significant

variations between age groups. The fact that gender and income did not significantly affect any of the variables under investigation suggests that the psychological aspects under investigation may be more broadly applicable to these demographic variables. Proposals include implementation plans that recognize the different behavioural influences of age and gender and fulfil their requirements and motivations for waste reduction. Think of universal strategies for waste reduction initiatives that go beyond economic differences and concentrate on improving psychological aspects like attitudes and norms that are pertinent to all people.

5. The results of the study demonstrate the crucial role that policy and education have in influencing waste reduction through psychological variables, indicating that both can be used to greatly influence public opinion. In order to encourage sustainable behaviours, educational curriculum and policies should concentrate on strengthening perceived behavioural control and personal norms, which have a significant impact. Encourage the inclusion of sustainability and waste management in all levels of education in order to establish solid personal norms from a young age. Encourage laws that give people more behavioural control over how they dispose of their waste, like making recycling facilities more easily available and establishing community composting initiatives.

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SUMMARY IN LITHUANIAN

PSICHOLOGINIŲ VEIKSNIŲ ĮTAKA KETINIMUI MAŽINTI DARŽOVIŲ IR VAISIŲ ATLIEKŲ KIEKĮ LIETUVOJE

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Rinkodaros ir integruotos komunikacijos studijų programa

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Vadovė doc. Dr. Elzė Rudienė , Vilnius, 2025

SUMMARY

97 puslapiai, 17? diagramų, 12 paveikslų, 9 lentelės, 123 literatūros šaltiniai.

Šiame magistro darbe nagrinėjami psichologiniai aspektai, darantys įtaką Lietuvos vartotojų ketinimams mažinti vaisių ir daržovių atliekų kiekį. Literatūros apžvalga, empirinis tyrimas ir išvados su rekomendacijomis tolesniems veiksmams sudaro tris pagrindines darbo dalis.

Literatūros apžvalgoje apžvelgiamos planuoto elgesio teorijos ir tarpasmeninio elgesio teorijos teorinės nuostatos, taip pat nagrinėjama, kaip nuostatos, subjektyvios normos, suvokiama elgesio kontrolė, asmeninės normos ir kaltės jausmas veikia atliekų mažinimo praktiką. Siekiant išsamiai pagrįsti tyrimą, taip pat nagrinėjami ankstesni maisto švaistymo ir psichologinių veiksnių tyrimai.

Empirinėje dalyje aprašoma Lietuvos vartotojų apklausa, kuri buvo atlikta naudojant klausimyną, siekiant įvertinti išvardytus psichologinius elementus ir jų įtaką ketinimams mažinti atliekų kiekį. Apklausos duomenims vertinti naudotos statistinės priemonės, siekiant ištirti sąsajas ir prognozuoti elgseną pagal nustatytus psichologinius požymius.

Tyrimo išvados rodo, kad ketinimus mažinti atliekų kiekį reikšmingai prognozuoja asmens nusiteikimas aplinkosaugos atžvilgiu ir suvokiama elgesio kontrolė. Be to, tyrime pabrėžiama, kaip subjektyvūs standartai ir asmeninės normos formuoja šiuos ketinimus, o tai rodo, kad visuomenės spaudimas ir asmeninė atsakomybė atlieka lemiamą vaidmenį skatinant tvarų elgesį.

Išvadų dalyje apibendrinami empiriniai rezultatai ir pateikiamos rekomendacijos rinkodaros specialistams, švietėjams ir politikos formuotojams, kad jie galėtų imtis tikslingų intervencinių priemonių, kurios didintų vartotojų informuotumą, atnaujintų atliekų tvarkymo infrastruktūrą ir skatintų bendruomenės strategiją, skirtą vaisių ir daržovių atliekų mažinimui. Apibendrinant galima teigti, kad disertacijoje gilinamos žinios apie elgsenos veiksnius, darančius įtaką atliekų tvarkymui, ir siūlomi praktiniai sprendimai, kaip sumažinti Lietuvos vaisių ir daržovių atliekų kiekį, remiant platesnes aplinkos tvarumo iniciatyvas.

SUMMARY IN ENGLISH

INFLUENCE OF PSYCHOLOGICAL FACTORS ON THE INTENTION TO REDUCE VEGETABLE AND FRUIT WASTE IN LITHUANIA

Mariia YATSIUK

Master Thesis

Study programme marketing and integrated communication

Faculty of Economics and Business Administration, Vilnius University

Supervisor Assoc. Prof. Dr. Elzė Rudienė , Vilnius, 2025

SUMMARY

97 pages, 17? charts, 12 figures, 9 tables, 123 references.

The psychological aspects affecting Lithuanian consumers' intents to cut down on fruit and vegetable waste are examined in this master's thesis. A literature review, empirical study, and findings with recommendations for further action comprise the thesis's three main elements. The theoretical frameworks of the Theory of Planned Behaviour and the Theory of Interpersonal Behaviour are covered in the literature review, which also looks at how attitudes, subjective norms, perceived behavioural control, personal norms, and anticipated guilt feelings influence waste reduction practices. To give a thorough foundation for the investigation, it also examines previous studies on food waste and psychological factors.

The empirical part describes a survey that was carried out among Lithuanian customers using a questionnaire to evaluate the psychological elements listed and how they affected their intentions to reduce waste. Statistical tools were used to evaluate survey data in order to investigate relationships and forecast behaviour based on the psychological characteristics that were found. The study's conclusions show that the intention to reduce waste is significantly predicted by one's own sentiments about the environment and perceived behavioural control. Additionally, the study emphasizes how subjective standards and personal norms shape these intents, indicating that societal pressures and individual responsibility play a critical role in promoting sustainable behaviours.

The conclusions section summarizes the empirical findings and makes recommendations for marketers, educators, and policymakers to create focused interventions that raise consumer awareness of consequences, upgrade waste management infrastructure, and encourage a community-based strategy for cutting down on fruit and vegetable waste.
All things considered, the thesis advances knowledge of behavioural factors influencing waste

management and offers practical solutions to reduce Lithuanian fruit and vegetable waste, supporting larger environmental sustainability initiatives.

ANNEX

Annex 1. Questionnaire for survey

№	Construct	Statement	Scale
1	Awareness of Consequences	1.Reducing vegetable and fruit waste benefits everyone in Lithuania 2.Wasting fruits and vegetables negatively impacts both the economy and society in Lithuania 3.Reducing fruit and vegetable waste leads to a healthier environment for future generations 4.The degradation of the environment due to vegetable and fruit waste directly affects my health. (e.g., increased greenhouse gases) 5.Vegetable and fruit waste in Lithuania can affect global food security and increase hunger in other countries	Likert scale “strongly agree" (7 points) to "strongly disagree" (1 point)
2	Ascription of Responsibility	1.Every person in Lithuania has a responsibility to plan their food purchases better to avoid waste 2.People in Lithuania are responsible for cooking and consuming in ways that reduce food waste 3.Households in Lithuania should be responsible for managing food waste, especially fruits and vegetables 4.I believe I should be responsible for reducing fruit and vegetable waste, even if others don’t do the same	Likert scale “strongly agree" (7 points) to "strongly disagree" (1 point)

3	Attitude	1.Planning my food purchases to reduce fruit and vegetable waste is a positive contribution to environmental protection in Lithuania 2.Reducing fruit and vegetable waste through better cooking practices improves my quality of life 3.Reducing fruit and vegetable waste is a smart and responsible approach to food consumption	Likert scale “strongly agree" (7 points) to "strongly disagree" (1 point)
4	Personal Norms	1. I feel bad when I throw away vegetables and fruits, knowing that some people do not have enough to eat. 2.I would feel like a more responsible person if I do not waste vegetables and fruits. 3.I feel disturbed by the amount of vegetable and fruit waste, knowing that it takes many resources to grow, process, package, and transport them. 4.I feel obliged to consider reducing vegetable and fruit waste when I make food or grocery choices. 5.If I buy vegetables and fruits, I feel morally obliged not to waste them. 6.I feel morally obliged to reduce vegetable and fruit waste, regardless of what others think.	Likert scale “strongly agree" (7 points) to "strongly disagree" (1 point)
5	Subjective Norms	1.Most people I care about believe I should plan better when buying fruits and vegetables to avoid waste	Likert scale “strongly agree" (7 points) to "strongly disagree" (1 point)

		2.My family and friends in Lithuania expect me to cook meals that prevent food waste 3.It is important to people around me that I do not waste fruits and vegetables 4.I feel social pressure to reduce vegetable and fruit waste in Lithuania 5.People who are similar to me are careful to avoid food waste when they shop or cook	
6	Perceived Behavioural Control	1.I find it easy to plan my grocery shopping to avoid buying excess fruits and vegetables 2.I feel confident in preparing meals from leftover fruits and vegetables 3.I can easily organize my meals to ensure that no fruits and vegetables are wasted 4.It is manageable for me to monitor and control how much fruit and vegetables are consumed in my household in Lithuania 5.People around me make it possible for me to stick to my goals of reducing fruit and vegetable waste	Likert scale “strongly agree" (7 points) to "strongly disagree" (1 point)
7	Anticipated Guilt	1.I feel guilty when I buy fruits and vegetables and end up throwing them away 2.I feel guilty when I cook more food than I can eat and waste fruits and vegetables	Likert scale “strongly agree" (7 points) to "strongly disagree" (1 point)

		3.Wasting fruits and vegetables makes me feel ashamed because it negatively impacts the environment in Lithuania 4.I feel regretful when I forget to use the fruits and vegetables I purchased before they spoil	
8	Intentions to reduce vegetable and fruit waste	1.I am willing to go out of my way to reduce vegetable and fruit waste. 2.My personal goal is to reduce as much vegetable and fruit waste as possible. 3.I will make every effort to produce only a small amount of vegetable and fruit waste. 4.I have seriously considered using all leftover vegetables and fruits. 5. I have a firm intention to reduce vegetable and fruit waste in the future.	Likert scale “strongly agree" (7 points) to "strongly disagree" (1 point)

Source: compiled by the author.

Annex 2. SPSS results for sociodemographic characteristics

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	135	49,8	49,8	49,8
	Male	132	48,7	48,7	98,5
	Prefer not to say	4	1,5	1,5	100,0
	Total	271	100,0	100,0	

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	17-20	43	15,9	15,9	15,9
	21-30	157	57,9	57,9	73,8
	31-40	43	15,9	15,9	89,7
	41-50	28	10,3	10,3	100,0
	Total	271	100,0	100,0	

Employment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Full time employed	94	34,7	34,7	34,7
	Full time employed, Student	41	15,1	15,1	49,8
	Other	4	1,5	1,5	51,3
	Part-time employed	12	4,4	4,4	55,7
	Part-time employed, Self-employed	2	,7	,7	56,5
	Part-time employed, Student	16	5,9	5,9	62,4
	Self-employed	13	4,8	4,8	67,2
	Student	28	10,3	10,3	77,5
	Student, Other	1	,4	,4	77,9
	Student, Self-employed	13	4,8	4,8	82,7
	Unemployed	9	3,3	3,3	86,0
	Unemployed, Student	38	14,0	14,0	100,0
	Total	271	100,0	100,0	

Your avarage income in EUROS per month

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1201-1500	54	19,9	19,9	19,9
	1501-2000	28	10,3	10,3	30,3
	2001 and more	26	9,6	9,6	39,9
	501-700	38	14,0	14,0	53,9
	701-900	27	10,0	10,0	63,8
	901-1200	39	14,4	14,4	78,2
	Prefer not to say	16	5,9	5,9	84,1
	Up to 500	43	15,9	15,9	100,0
	Total	271	100,0	100,0	

Annex 3. SPSS results for descriptive analysis and reliability and validity of constructs

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation

Awareness of Consequences 1	271	1	7	5,18	1,125
Awareness of Consequences 2	271	2	7	5,62	1,195
Awareness of Consequences 3	271	1	7	5,42	1,445
Awareness of Consequences 4	271	1	7	5,22	1,322
Awareness of Consequences 5	271	1	7	5,23	1,294
Valid N (listwise)	271				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Ascription of responsibility1	271	1	7	5,12	1,194
Ascription of responsibility2	271	1	7	5,48	1,255
Ascription of responsibility3	271	1	7	5,46	1,352
Ascription of responsibility4	271	1	7	5,56	1,298
Valid N (listwise)	271				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Attitude1	271	1	7	5,18	1,183
Attitude2	271	1	7	5,54	1,284
Attitude3	271	1	7	5,36	1,271
Valid N (listwise)	271				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
personal norms1	271	1	7	5,06	1,255
personal norms2	271	1	7	5,54	1,252
personal norms3	271	1	7	5,19	1,341

personal norms4	271	1	7	5,40	1,298
personal norms5	271	1	7	5,37	1,301
personal norms6	271	1	7	5,34	1,269
Valid N (listwise)	271				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Subjective Norms1	271	1	7	4,73	1,175
Subjective Norms2	271	1	7	5,28	1,389
Subjective Norms3	271	1	7	5,12	1,343
Subjective Norms4	271	1	7	5,00	1,481
Subjective Norms5	271	1	7	5,15	1,267
Valid N (listwise)	271				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Perceived Behavioural Control1	271	1	7	4,93	1,239
Perceived Behavioural Control2	271	1	7	5,35	1,365
Perceived Behavioural Control3	271	1	7	5,22	1,380
Perceived Behavioural Control4	271	1	7	5,28	1,358
Perceived Behavioural Control5	271	1	7	5,22	1,285
Valid N (listwise)	271				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Anticipated Guilt	271	1	7	5,19	1,193
Anticipated Guilt2	271	1	7	5,56	1,286

Anticipated Guilt3	271	1	7	5,16	1,396
Anticipated Guilt4	271	1	7	5,41	1,360
Valid N (listwise)	271				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Intention 1	271	1	7	5,30	1,383
Intention 2	271	1	7	5,24	1,292
Intention 3	271	1	7	5,18	1,397
Intention 4	271	1	7	5,36	1,271
Intention 5	271	1	7	4,94	1,235
Valid N (listwise)	271				

Reliability Statistics

Cronbach's Alpha	N of Items
,835	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Awareness of Consequences 1	21,49	18,021	,571	,820
Awareness of Consequences 2	21,05	16,905	,652	,799
Awareness of Consequences 3	21,25	15,374	,642	,803
Awareness of Consequences 4	21,45	16,138	,645	,800
Awareness of Consequences 5	21,44	15,988	,684	,789

Reliability Statistics

Cronbach's Alpha	N of Items
,825	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Ascription of responsibility1	16,50	10,792	,619	,793
Ascription of responsibility2	16,14	9,983	,695	,758
Ascription of responsibility3	16,16	9,690	,660	,775
Ascription of responsibility4	16,06	10,197	,627	,790

Reliability Statistics

Cronbach's Alpha	N of Items
,808	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Attitude1	10,90	5,234	,643	,752
Attitude2	10,54	4,679	,682	,711
Attitude3	10,72	4,869	,647	,747

Reliability Statistics

Cronbach's Alpha	N of Items
,879	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
personal norms1	26,84	27,270	,628	,867
personal norms2	26,35	26,785	,673	,860
personal norms3	26,71	26,089	,671	,860

personal norms4	26,50	26,510	,664	,861
personal norms5	26,53	25,709	,733	,850
personal norms6	26,55	25,848	,745	,848

Reliability Statistics

Cronbach's Alpha	N of Items
,868	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Subjective Norms1	20,56	20,995	,633	,855
Subjective Norms2	20,01	18,463	,737	,829
Subjective Norms3	20,17	19,136	,702	,838
Subjective Norms4	20,30	18,016	,715	,836
Subjective Norms5	20,14	19,884	,682	,843

Reliability Statistics

Cronbach's Alpha	N of Items
,865	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Perceived Behavioral Control1	21,06	19,871	,646	,846
Perceived Behavioral Control2	20,65	18,267	,721	,827
Perceived Behavioral Control3	20,77	18,323	,704	,831
Perceived Behavioral Control4	20,72	18,500	,702	,832

Perceived Behavioral Control5	20,77	19,486	,653	,844

Reliability Statistics

Cronbach's Alpha	N of Items
,808	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Anticipated Guilt	16,13	11,254	,598	,773
Anticipated Guilt2	15,76	10,188	,684	,731
Anticipated Guilt3	16,16	10,411	,567	,790
Anticipated Guilt4	15,91	9,951	,660	,742

Reliability Statistics

Cronbach's Alpha	N of Items
,754	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Intention 1	20,72	14,123	,560	,695
Intention 2	20,78	14,899	,530	,706
Intention 3	20,83	14,490	,510	,714
Intention 4	20,66	15,285	,499	,717
Intention 5	21,08	15,457	,502	,716

ANOVA with Cochran's Test

		Sum of Squares	df	Mean Square	Cochran's Q	Sig
Between People		1180,388	270	4,372		
Within People	Between Items	28,524	4	7,131	25,966	<,001
	Residual	1162,276	1080	1,076		
	Total	1190,800	1084	1,099		
Total		2371,188	1354	1,751		

Grand Mean = 5,20

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
awareness_mean	,196	271	<,001	,885	271	<,001
ascription_mean	,215	271	<,001	,882	271	<,001
attitude_mean	,173	271	<,001	,901	271	<,001
personsalnorms_mean	,168	271	<,001	,899	271	<,001
subjectivenorms_mean	,185	271	<,001	,912	271	<,001
percieved_mean	,206	271	<,001	,877	271	<,001
guilt_mean	,196	271	<,001	,889	271	<,001
intention_mean	,174	271	<,001	,912	271	<,001

a. Lilliefors Significance Correction

Annex 4. SPSS results for hypothesis testing

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	awareness_mean[b]	.	Enter

a. Dependent Variable: personsalnorms_mean

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,547[a]	,299	,297	,85024

a. Predictors: (Constant), awareness_mean

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	83,098	1	83,098	114,948	<,001[b]
	Residual	194,464	269	,723		
	Total	277,562	270			

a. Dependent Variable: personsalnorms_mean
b. Predictors: (Constant), awareness_mean

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2,404	,276		8,704	<,001
	awareness_mean	,547	,051	,547	10,721	<,001

a. Dependent Variable: personsalnorms_mean

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	ascription_mean[b]	.	Enter

a. Dependent Variable: personsalnorms_mean
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,597[a]	,356	,354	,81493

a. Predictors: (Constant), ascription_mean

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	98,916	1	98,916	148,946	<,001[b]
	Residual	178,645	269	,664		
	Total	277,562	270			

a. Dependent Variable: personsalnorms_mean
b. Predictors: (Constant), ascription_mean

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,160	,263		8,208	<,001
	ascription_mean	,584	,048	,597	12,204	<,001

a. Dependent Variable: personsalnorms_mean

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	attitude_mean[b]	.	Enter

a. Dependent Variable: intention_mean
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,724[a]	,524	,522	,64650

a. Predictors: (Constant), attitude_mean

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	123,645	1	123,645	295,828	<,001[b]
	Residual	112,432	269	,418		

	Total	236,078	270			

a. Dependent Variable: intention_mean

b. Predictors: (Constant), attitude_mean

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1,781	,203		8,786	<,001
	attitude_mean	,639	,037	,724	17,200	<,001

a. Dependent Variable: intention_mean

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	personsalnorms_mean[b]	.	Enter

a. Dependent Variable: intention_mean

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,701[a]	,492	,490	,66783

a. Predictors: (Constant), personsalnorms_mean

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	116,104	1	116,104	260,322	<,001[b]
	Residual	119,974	269	,446		
	Total	236,078	270			

a. Dependent Variable: intention_mean

b. Predictors: (Constant), personsalnorms_mean

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1,766	,217		8,146	<,001
	personsalnorms_mean	,647	,040	,701	16,134	<,001

a. Dependent Variable: intention_mean

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	subjectivenorms_mean[b]	.	Enter

a. Dependent Variable: intention_mean

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,746[a]	,556	,555	,62392

a. Predictors: (Constant), subjectivenorms_mean

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	131,361	1	131,361	337,444	<,001[b]
	Residual	104,717	269	,389		
	Total	236,078	270			

a. Dependent Variable: intention_mean

b. Predictors: (Constant), subjectivenorms_mean

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1,938	,182		10,660	<,001
	subjectivenorms_mean	,645	,035	,746	18,370	<,001

a. Dependent Variable: intention_mean

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	percieved_mean[b]	.	Enter

a. Dependent Variable: intention_mean

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,803[a]	,645	,643	,55851

a. Predictors: (Constant), percieved_mean

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	152,167	1	152,167	487,817	<,001[b]
	Residual	83,911	269	,312		
	Total	236,078	270			

a. Dependent Variable: intention_mean

b. Predictors: (Constant), percieved_mean

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1,551	,169		9,188	<,001

	percieved_mean	,703	,032	,803	22,087	<,001

a. Dependent Variable: intention_mean

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	guilt_mean[b]	.	Enter

a. Dependent Variable: intention_mean

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,760[a]	,577	,576	,60916

a. Predictors: (Constant), guilt_mean

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	136,259	1	136,259	367,204	<,001[b]
	Residual	99,818	269	,371		
	Total	236,078	270			

a. Dependent Variable: intention_mean

b. Predictors: (Constant), guilt_mean

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1,578	,193		8,190	<,001
	guilt_mean	,680	,035	,760	19,163	<,001

a. Dependent Variable: intention_mean

Annex 5. SPSS results for influence of gender, age and income on psychological constructs

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
awareness_mean	Between Groups	4,441	2	2,220	2,177	,115
	Within Groups	273,366	268	1,020		
	Total	277,806	270			
ascription_mean	Between Groups	1,867	2	,933	,869	,421
	Within Groups	287,854	268	1,074		
	Total	289,721	270			
attitude_mean	Between Groups	2,118	2	1,059	,943	,391
	Within Groups	300,956	268	1,123		
	Total	303,074	270			
personsalnorms_mean	Between Groups	,645	2	,323	,312	,732
	Within Groups	276,916	268	1,033		
	Total	277,562	270			
subjectivenorms_mean	Between Groups	2,545	2	1,272	1,090	,338
	Within Groups	312,751	268	1,167		
	Total	315,295	270			
percieved_mean	Between Groups	1,812	2	,906	,792	,454
	Within Groups	306,508	268	1,144		
	Total	308,319	270			
guilt_mean	Between Groups	4,283	2	2,141	1,976	,141
	Within Groups	290,409	268	1,084		
	Total	294,692	270			
intention_mean	Between Groups	1,349	2	,675	,770	,464
	Within Groups	234,728	268	,876		
	Total	236,078	270			

ANOVA Effect Sizes[a,b]

		Point Estimate	95% Confidence Interval	
			Lower	Upper
awareness_mean	Eta-squared	,016	,000	,053
	Epsilon-squared	,009	-,007	,045

	Omega-squared Fixed-effect	,009	-,007	,045
	Omega-squared Random-effect	,004	-,004	,023
ascription_mean	Eta-squared	,006	,000	,033
	Epsilon-squared	-,001	-,007	,025
	Omega-squared Fixed-effect	-,001	-,007	,025
	Omega-squared Random-effect	,000	-,004	,013
attitude_mean	Eta-squared	,007	,000	,034
	Epsilon-squared	,000	-,007	,027
	Omega-squared Fixed-effect	,000	-,007	,027
	Omega-squared Random-effect	,000	-,004	,014
personsalnorms_mean	Eta-squared	,002	,000	,020
	Epsilon-squared	-,005	-,007	,013
	Omega-squared Fixed-effect	-,005	-,007	,013
	Omega-squared Random-effect	-,003	-,004	,006
subjectivenorms_mean	Eta-squared	,008	,000	,037
	Epsilon-squared	,001	-,007	,029
	Omega-squared Fixed-effect	,001	-,007	,029
	Omega-squared Random-effect	,000	-,004	,015
percieved_mean	Eta-squared	,006	,000	,031
	Epsilon-squared	-,002	-,007	,024
	Omega-squared Fixed-effect	-,002	-,007	,024
	Omega-squared Random-effect	-,001	-,004	,012
guilt_mean	Eta-squared	,015	,000	,050
	Epsilon-squared	,007	-,007	,043
	Omega-squared Fixed-effect	,007	-,007	,043
	Omega-squared Random-effect	,004	-,004	,022
intention_mean	Eta-squared	,006	,000	,031
	Epsilon-squared	-,002	-,007	,024

	Omega-squared Fixed-effect	-,002	-,007	,023
	Omega-squared Random-effect	-,001	-,004	,012

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.
b. Negative but less biased estimates are retained, not rounded to zero.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
awareness_mean	Between Groups	15,249	3	5,083	5,169	,002
	Within Groups	262,558	267	,983		
	Total	277,806	270			
ascription_mean	Between Groups	19,238	3	6,413	6,330	<,001
	Within Groups	270,483	267	1,013		
	Total	289,721	270			
attitude_mean	Between Groups	18,256	3	6,085	5,704	<,001
	Within Groups	284,819	267	1,067		
	Total	303,074	270			
personsalnorms_mean	Between Groups	5,897	3	1,966	1,932	,125
	Within Groups	271,665	267	1,017		
	Total	277,562	270			
subjectivenorms_mean	Between Groups	5,932	3	1,977	1,707	,166
	Within Groups	309,363	267	1,159		
	Total	315,295	270			
percieved_mean	Between Groups	8,695	3	2,898	2,583	,054
	Within Groups	299,625	267	1,122		
	Total	308,319	270			
guilt_mean	Between Groups	7,657	3	2,552	2,374	,071
	Within Groups	287,035	267	1,075		
	Total	294,692	270			
intention_mean	Between Groups	6,067	3	2,022	2,347	,073
	Within Groups	230,011	267	,861		
	Total	236,078	270			

ANOVA Effect Sizes[a,b]

		Point Estimate	95% Confidence Interval	
			Lower	Upper
awareness_mean	Eta-squared	,055	,009	,107
	Epsilon-squared	,044	-,002	,097
	Omega-squared Fixed-effect	,044	-,002	,097
	Omega-squared Random-effect	,015	-,001	,035
ascription_mean	Eta-squared	,066	,015	,123
	Epsilon-squared	,056	,004	,113
	Omega-squared Fixed-effect	,056	,004	,112
	Omega-squared Random-effect	,019	,001	,041
attitude_mean	Eta-squared	,060	,011	,115
	Epsilon-squared	,050	,000	,105
	Omega-squared Fixed-effect	,050	,000	,104
	Omega-squared Random-effect	,017	,000	,037
personsalnorms_mean	Eta-squared	,021	,000	,057
	Epsilon-squared	,010	-,011	,047
	Omega-squared Fixed-effect	,010	-,011	,046
	Omega-squared Random-effect	,003	-,004	,016
subjectivenorms_mean	Eta-squared	,019	,000	,053
	Epsilon-squared	,008	-,011	,042
	Omega-squared Fixed-effect	,008	-,011	,042
	Omega-squared Random-effect	,003	-,004	,014
percieved_mean	Eta-squared	,028	,000	,069
	Epsilon-squared	,017	-,011	,058
	Omega-squared Fixed-effect	,017	-,011	,058
	Omega-squared Random-effect	,006	-,004	,020
guilt_mean	Eta-squared	,026	,000	,065

	Epsilon-squared	,015	-,011	,055
	Omega-squared Fixed-effect	,015	-,011	,054
	Omega-squared Random-effect	,005	-,004	,019
intention_mean	Eta-squared	,026	,000	,065
	Epsilon-squared	,015	-,011	,054
	Omega-squared Fixed-effect	,015	-,011	,054
	Omega-squared Random-effect	,005	-,004	,019

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.
b. Negative but less biased estimates are retained, not rounded to zero.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
awareness_mean	Between Groups	8,808	7	1,258	1,230	,286
	Within Groups	268,999	263	1,023		
	Total	277,806	270			
ascription_mean	Between Groups	7,542	7	1,077	1,004	,429
	Within Groups	282,179	263	1,073		
	Total	289,721	270			
attitude_mean	Between Groups	4,595	7	,656	,578	,773
	Within Groups	298,479	263	1,135		
	Total	303,074	270			
personsalnorms_mean	Between Groups	8,356	7	1,194	1,166	,323
	Within Groups	269,206	263	1,024		
	Total	277,562	270			
subjectivenorms_mean	Between Groups	11,177	7	1,597	1,381	,214
	Within Groups	304,119	263	1,156		
	Total	315,295	270			
percieved_mean	Between Groups	7,809	7	1,116	,976	,449
	Within Groups	300,511	263	1,143		
	Total	308,319	270			

guilt_mean	Between Groups	9,035	7	1,291	1,188	,310
	Within Groups	285,657	263	1,086		
	Total	294,692	270			
intention_mean	Between Groups	5,213	7	,745	,848	,548
	Within Groups	230,865	263	,878		
	Total	236,078	270			

ANOVA Effect Sizes[a,b]

		Point Estimate	95% Confidence Interval	
			Lower	Upper
awareness_mean	Eta-squared	,032	,000	,057
	Epsilon-squared	,006	-,027	,031
	Omega-squared Fixed-effect	,006	-,027	,031
	Omega-squared Random-effect	,001	-,004	,005
ascription_mean	Eta-squared	,026	,000	,047
	Epsilon-squared	,000	-,027	,021
	Omega-squared Fixed-effect	,000	-,027	,021
	Omega-squared Random-effect	,000	-,004	,003
attitude_mean	Eta-squared	,015	,000	,025
	Epsilon-squared	-,011	-,027	-,001
	Omega-squared Fixed-effect	-,011	-,027	-,001
	Omega-squared Random-effect	-,002	-,004	,000
personsalnorms_mean	Eta-squared	,030	,000	,054
	Epsilon-squared	,004	-,027	,029
	Omega-squared Fixed-effect	,004	-,027	,029
	Omega-squared Random-effect	,001	-,004	,004
subjectivenorms_mean	Eta-squared	,035	,000	,063
	Epsilon-squared	,010	-,027	,038
	Omega-squared Fixed-effect	,010	-,027	,038

	Omega-squared Random-effect	,001	-,004	,006
percieved_mean	Eta-squared	,025	,000	,046
	Epsilon-squared	-,001	-,027	,020
	Omega-squared Fixed-effect	-,001	-,027	,020
	Omega-squared Random-effect	,000	-,004	,003
guilt_mean	Eta-squared	,031	,000	,055
	Epsilon-squared	,005	-,027	,030
	Omega-squared Fixed-effect	,005	-,027	,030
	Omega-squared Random-effect	,001	-,004	,004
intention_mean	Eta-squared	,022	,000	,040
	Epsilon-squared	-,004	-,027	,014
	Omega-squared Fixed-effect	-,004	-,027	,014
	Omega-squared Random-effect	-,001	-,004	,002

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.
b. Negative but less biased estimates are retained, not rounded to zero.