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Faculty of Social Sciences
Institute of Economic Studies

MASTER'S THESIS

Green purchasing: Case of Bottled Water Consumption in the Czech Republic

Author: **Bc. Klára Hanusová**

Study program: **Economics and Finance**

Supervisor: **Mgr. Milan Ščasný, Ph.D.**

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Declaration of Authorship

The author hereby declares that she compiled this thesis independently; using only the listed resources and literature, and the thesis has not been used to obtain a different or the same degree.

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Prague, December 30, 2022 Klára Hanusová

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Abstract

To tackle various environmental issues, many of which stem from unsustainable consumer behavior, policymakers make an effort to transition toward a circular economy. One of the initiatives in the Czech Republic includes a reduction in single-use plastic waste. An example of this waste category are plastic bottles used for beverage packaging. Consequently, this thesis aims to uncover the determinants of bottled water consumption in the Czech Republic, as a similar study does not appear to exist in this context. Data (n=3 411) used for the analysis are obtained from a survey "TAČR Kohoutková". Methods used include estimation by Generalized Ordered Logit and Multinomial Logit. Results uncover socio-demographic characteristics, taste, health reasons, constructs from the Theory of Planned Behavior, and habits as predictors of bottled water consumption. It was found that highly educated people and those with a strong habit of drinking tap water are less likely to consume bottled water. The main consumers of this product appear to be those who negatively perceive tap water taste and healthiness, or positively perceive such characteristics of bottled water. On contrary, there is not enough evidence for identifying a relationship between environmental values and bottled water intake.

JEL Classification	D12, D90, J10, Q01
Keywords	bottled water, consumer behavior, sustainability, Czech consumers, habits
Title	Green purchasing: Case of Bottled Water Consumption in the Czech Republic

Abstrakt

Aby se tvůrci politik vypořádali s různými environmentálními problémy, z nichž mnohé pramení z neudržitelného chování spotřebitelů, usilují o přechod k oběhovému hospodářství. Jednou z iniciativ v České republice je snížení jednorázového plastového odpadu. Příkladem této kategorie odpadů jsou plastové lahve používané k balení nápojů. Následně si tato práce klade za cíl odhalit determinanty spotřeby balené vody v České republice, jelikož podobná studie v daném kontextu zřejmě nebyla provedena. Data (n=3 411) použitá pro analýzu jsou získána z dotazníkového šetření „TAČR Kohoutková". Použitá metóda zahrnuje Generalizovanou ordinální logistickou regresi a Multinomickou logistickou regresi. Výsledky odhalují sociodemografické charakteristiky, chuť, zdravotní důvody, konstrukty z teorie plánovaného chování a návyky jako prediktory spotřeby balené vody. Bylo zjištěno, že u vysoce vzdělaných lidí a lidí se silným návykem pít vodu z kohoutku existuje menší pravděpodobnost, že budou konzumovat balenou vodu. Hlavními spotřebiteli tohoto produktu se jeví ti, kteří negativně vnímají chuť a zdraví vody z kohoutku, nebo pozitivně vnímají takové vlastnosti u balené vody. Naopak, neexistuje dostatek důkazů pro určení vztahu mezi environmentálními hodnotami a konzumací balené vody.

Klasifikace	D12, D90, J10, Q01
Klíčová slova	balená voda, chování spotřebitelů, udržitelnost, českí spotřebitelé, návyky
Název práce	Zelené nakupování: Spotřeba balené vody v České republice

Contents

List of Tables

Acronyms

EU	European Union
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
GOL	Generalized Ordered Logit
MNL	Multinomial Logit

Master's Thesis Proposal

Author:	Bc. Klára Hanusová
Supervisor:	Mgr. Milan Ščasný, Ph.D.
Defense Planned:	February 2023

Proposed Topic:
Green Purchasing in the Czech Republic

Motivtion:
One of the key environmental issues nowadays is an unsustainable behavior of consumers. People produce large amounts of waste, which in conjunction with an increasing trend in population growth represents a global problem that needs to be addressed.

Researchers begin to discuss a concept of Green Purchasing, which refers to purchasing of goods that have lesser negative, or higher positive effect on the environment and/or human health, compared to their conventional alternatives. A comprehensive overview of the most recent literature is provided by Wijekoon & Sabri (2021), and Zhang & Dong (2020). Based on their research, the most common explanatory variables are internal variables, including attitudes, environmental concern and knowledge, perceived behavioral control, and subjective norms. Nonetheless, external, socio-demographic, variables are also found to be linked to pro-environmental behavior but with lesser strength, being more moderating variables (Chekima et al., 2015; Wang et al., 2020; Witek & Kuzniar, 2021).

In the last 10 years, the research on green purchasing intention in the Czech Republic has been quite limited. Nonetheless, Patak et al. (2021) study consumers' green purchasing intention of house chemicals. They find that environmental concern, green lifestyle, product knowledge, and product promotion have positive effects on green purchasing, while the influence of community is insignificant.

The prevailing challenge in the research on green purchasing is a phenomenon of the intention-behavior gap (ElHaffar et al., 2020; Wijekoon & Sabri, 2021). It is well established that unsustainable behavior has an adverse effect on the environment. Shopping behavior of consumers also has its implications as it determines (via demand) which goods are produced. Consequently, it is important to focus on antecedents of green purchasing. To tackle the problem of intention-behavior gap, additional determinants should be considered and further explored.

Hypotheses:
Hypothesis #1: Environmental concern is positively linked to green purchasing intention.
Hypothesis #2: Habits to purchase conventional products are negatively correlated with green purchasing intention.
Hypothesis #3: Perceived barriers to green purchasing are negatively correlated with intentions to purchase green products.

Methodology:
The inputs will be gathered with the use of an online questionnaire, developed through CEVOOH project funded within the Technology Agency of the Czech

Republic (Dr. Ščasný, my supervisor, is leading this task). In collaboration with the CEVOOH subteam, I will prepare the questionnaire and gather the data together with my supervisor and his colleagues. Consequently, the data used will be a cross-section.

The theoretical background of my thesis will be primarily based on the Theory of Planned Behavior proposed by Ajzen (1985). In this matter, I will consider the intentions of the consumers to engage in green purchasing. Following the stream of research on strong habits by Becker & Murphy (1988), and Becker (1992), I will address shopping habits. Moreover, I plan to study the impact of both external and internal determinants of green purchasing intention. However, the exact structure of items describing green purchasing and explanatory variables is to be determined based on the questionnaire design.

Depending on the data structure, I will firstly perform factor analysis. To test each hypothesis, I will analyze links between explanatory variables and green purchasing intention by using Structural Equation Modeling. This approach is used by vast majority of the research papers on this topic (Caniels et al., 2021; Joshi et al., 2021; Costa et al., 2021).

Expected Contribution:

Recent literature on the green purchasing using the European sample has been very limited, while the majority used the Asian sample (Wijekoon & Sabri, 2021). While the use of the same methodology is reasonable, the results from Asian samples may not be applicable for the European population because of cultural differences. Due to the country-specific uniqueness of consumers I wish to contribute to the research of Czech consumers. I want to do so in relation to green purchasing intention as this area is not sufficiently explored. To improve the model I intend to test the validity of additional socio-economic variables and habits.

Results of my thesis are expected to identify characteristics of Czech consumers in relation to green purchasing. Consequently, they may be used as supporting material for a creation of related policies, and decision-making of firms selling green products.

Outline:

1. Introduction: I will emphasize the necessity of focusing on current environmental issues and introduce a concept of green purchasing.
2. Literature Review: I will present relevant research covering areas such as consumer behavior, sustainability (green purchasing), and theoretical and econometric background.
3. Data: I will describe in depth the process of data collection, and present the relevant variables with their descriptive statistics.
4. Methodology: I will discuss the suitability of methods used and present all steps of econometric analysis of the data.
5. Results: I will introduce the results of the analysis and their significance.
6. Conclusion: I will summarize my thesis and discuss the implications of the results.

Core Bibliography:

1. Ajzen, I. (1985). From Intentions to Actions: A Theory of Planned Behavior. In J. Kuhl & J. Beckmann (Eds.), Action Control (pp. 11–39). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-69746-3_2
2. Becker, G. S. (1992). Habits, Addictions, and Traditions. Kyklos, 45(3), 327–345. https://doi.org/10.1111/j.1467-6435.1992.tb02119.x

3. Becker, G. S., & Murphy, K. M. (1988). A Theory of Rational Addiction. 96(4), 675–700.
4. Caniëls, M. C. J., Lambrechts, W., Platje, J. (Joost), Motylska-Kuźma, A., & Fortuński, B. (2021). Impressing my friends: The role of social value in green purchasing attitude for youthful consumers. Journal of Cleaner
5. Production, 303, 126993. https://doi.org/10.1016/j.jclepro.2021.126993
6. Chekima, B., Syed Khalid Wafa, S. A. W., Igau, O. A., Chekima, S., & Sondoh, S. L. (2016). Examining green consumerism motivational drivers: Does premium price and demographics matter to green purchasing? Journal of Cleaner Production, 112, 3436–3450. https://doi.org/10.1016/j.jclepro.2015.09.102
7. Costa, C. S. R., Costa, M. F. da, Maciel, R. G., Aguiar, E. C., & Wanderley, L. O. (2021). Consumer antecedents towards green product purchase intentions. Journal of Cleaner Production, 313, 127964. https://doi.org/10.1016/j.jclepro.2021.127964
8. ElHaffar, G., Durif, F., & Dubé, L. (2020). Towards closing the attitude-intention-behavior gap in green consumption: A narrative review of the literature and an overview of future research directions. Journal of Cleaner Production, 275, 122556. https://doi.org/10.1016/j.jclepro.2020.122556
9. Joshi, Y., Uniyal, D. P., & Sangroya, D. (2021). Investigating consumers' green purchase intention: Examining the role of economic value, emotional value and perceived marketplace influence. Journal of Cleaner Production, 328, 129638. https://doi.org/10.1016/j.jclepro.2021.129638
10. Patak, M., Branska, L., & Pecinova, Z. (2021). Consumer Intention to Purchase Green Consumer Chemicals. Sustainability, 13(14), 7992. https://doi.org/10.3390/su13147992
11. Wang, B., Li, J., Sun, A., Wang, Y., & Wu, D. (2019). Residents' Green Purchasing Intentions in a Developing-Country Context: Integrating PLS-SEM and MGA Methods. Sustainability, 12(1), 30. https://doi.org/10.3390/su12010030
12. Wijekoon, R., & Sabri, M. F. (2021). Determinants That Influence Green Product Purchase Intention and Behavior: A Literature Review and Guiding Framework. Sustainability, 13(11), 6219. https://doi.org/10.3390/su13116219
13. Witek, L., & Kuźniar, W. (2020). Green Purchase Behavior: The Effectiveness of Sociodemographic Variables for Explaining Green Purchases in Emerging Market. Sustainability, 13(1), 209. https://doi.org/10.3390/su13010209
14. Zhang, X., & Dong, F. (2020). Why Do Consumers Make Green Purchase Decisions? Insights from a Systematic Review. International Journal of Environmental Research and Public Health, 17(18), 6607. https://doi.org/10.3390/ijerph17186607

1 Introduction

A substantial amount of attention is being given to environmental issues. There exist threats that are very likely to have an impact on a global scale if disregarded. Moreover, these problems are caused to a large extent by human activity. Specifically, in the European Union (EU), consumption and production patterns of goods mostly affect climate change, fossil resources, and water use (Castellani et al., 2021). World Economic Forum (2019) identifies water crisis as one of the threats with a very high likelihood and a considerable impact on people, their health, and economic activity. As such, the water crisis was among the top 5 crises in 2019.

The EU attempts to respond to environmental crises and protect the environment for future generations. Consequently, a lot of effort is put into the design of appropriate legislative policies by governments, and new business strategies that take into consideration the sustainability dimension. Two main initiatives involve the EU Green Deal and Circular Economy Action Plan. Overall, 17 Strategic Development Goals are identified in the context of the EU Green Deal. Two of these golas that relate to the topic of the thesis are „Clean water and sanitation“, and „Sustainable consumption and production“. The Circular Economy Action Plan identifies plastic products (mainly single-use) as an issue that needs to be addressed. According to Single-Use Plastics Directive adopted in 2019, a reduction of certain single-use plastics is essential. The EU member countries respond by designing new ways of doing things. Between 2018 and 2021 the Czech policymakers worked on creation of a strategy for circular-economy implementation in the Czech Republic. This strategy is referred to as „Cirkulární Česko 2040“ Action Plan. In transitioning from a linear to a circular model, the goal is to decrease the adverse environmental impact of high material intensity by lowering the material use (MŽP, 2021). The document among else acknowledges the importance of the whole life-cycle chain (i.e., products and product design, consumption and consumer, and waste management). As such, a special attention is given also to the reduction of plastic packaging.[1] The need for change has

[1] For a review of all strategic goals, see MŽP (2021)

been translated into other initiatives from the side of policymakers as well. Within the context of this thesis, a campaign such as „Dost bylo plastu“ should be mentioned. Another example of an initiative is „Program o předcházení vzniku odpadů“.

Desired changes in policies described above stem from several key antecedents. One of the ways in which human activity contributes to environmental deterioration is through huge production and mismanagement of waste. According to United Nations (2021), the overall global material footprint increased by 70% between 2000 and 2017. Within the same time period, the amount of material used to satisfy the needs of each country rose by 40%. One of the waste categories that substantially adds to the amount produced are plastic products. Production of plastic waste amounts to 400 million tons each year (United Nations, 2018). Moreover, around 75-199 million tons are already found in the oceans. It is reported that within this waste category, around 36% corresponds to single-use plastic (e.g., PET bottles), out of which 85% does not get recycled. Similarly, the European Strategy for Plastics in the Circular Economy suggests that packaging accounts for a majority of the total amount of plastic waste (European Commission, 2018). Thus, by demanding bottled water (together with other products), consumers greatly affect this outcome. The situation in the Czech Republic appears to be slightly more optimistic. Waste from plastic packaging was reported to be in total 264 453 tons in 2020 (CENIA, 2021a), which corresponds to 24.72kg p.c. (Eurostat, 2022). Data for the proportion of plastic waste being recycled in 2020 was not available, nonetheless, 61% of plastic waste was recycled in 2019 (MŽP, 2021).

The adverse consequences of high demand for bottled water have several dimensions. The excessive consumption of bottled water has negative impacts on the environment, as well as on society and the economy (Parag & Roberts, 2009). For instance, in countries with poor waste management systems, single-use plastics are linked to vector-borne diseases, such as malaria (United Nations, 2018). In addition, many researchers warn against the threat of pollution by microplastics (e.g., Kasavan et al., 2021). As a lot of plastic waste ends up in the marine systems, there is a substantial risk of these pollutants entering the food system (Cole et al., 2011). Since a majority of the microplastic pollutants stem from consumer behavior, Free et al. (2014) warn that without proper waste management systems, even small populations have the ability to heavily pollute surrounding ecosystems. Attention to plastic waste should be given also due to substantial economic impacts. The estimated loss of value within poorly governed processes of plastic waste management is around $80-120 billion (United Nations, 2018). To remedy this problem, United Nations (2018) suggests that governments should enable the circularity of the plastics used in the economy.

Bottled water represents a less favorable alternative to tap water in terms of sustainable behavior. For instance, Botto (2009) finds that tap water has 300 times lower ecological and carbon footprint than bottled water. The author adds that to pack 1.5l of water, the industry needs to use in addition 2.11l of water. Botto (2009) continues to emphasize that this amount of water will not be drunk by any consumer, as it is expected to be lost due to bottling, transportation, and other procedures. In addition, there is evidence that the processes involving production and transportation are the most energy-intensive phases of the water bottle life cycle (Gleick & Cooley, 2009). Consequently, these are the stages that are found to have the highest impact on the environment (Horowitz et al., 2018).

Many people consider bottled water to be safer compared to tap water. Meanwhile, research suggests that there can exist safety issues in the case of bottled water as well. For instance, in their research, Mason et al. (2018) select multiple water bottles and find microplastic contamination in 93% of the cases. Moreover, Cox et al. (2013) describe that individuals who achieve their recommended daily water intake solely through the consumption of bottled water have their microplastics intake higher by 90 000 compared to those who only drink tap water. Lastly, there exists evidence of bacteria presence in some packaged water above acceptable levels (Timilshina et al., 2013). These insights signal that the mainstream perceptions of bottled water as being safer than tap water may not always be well founded. Nonetheless, it is not the intention of this thesis to suggest that all bottled water is generally unsafe.

Even though research clearly shows the adverse effects of drinking bottled water, the production of this good remains high in volume. Rodwan Jr. (2020) notes that bottled water consumption has been steadily rising since 1977. The estimated annual expenditures of those who do not consider tap water to be safe, amount to approximately $5.65 billion (Javidi & Pierce, 2018). Moreover, the total world consumption of bottled water was estimated to be 111 billion gallons in 2019, with China being responsible for ¼ of the total consumption (Rodwan Jr., 2020). On the European level, bottled water intake amounts to more than 25 gallons p.c., with Germany, Italy, and France being the top 3 countries (Illsley, 2017; Rodwan Jr., 2018).

In terms of sustainability, a desired behavior of consumers would be one that can be characterized as green purchasing. Green purchasing refers to buying goods that have a lesser negative impact on the environment and/or human health than their counterparts. In the case of drinkable water, it would be favorable not to buy any kind of packed water, and to consume water from a tap. Therefore, it is essential to uncover underlying predictors of bottled water consumption, as it is a substitute to tap water.

Consumer behavior in relation to bottled water consumption should be considered also for a successful transition toward the circular economy. In the EU, the expenditures of households are mainly connected to consumption (European Commission, 2022). In the Czech Republic, 16.6% of household expenditures went to the consumption of food and non-alcoholic beverages in 2021 (Eurostat, 2022). Therefore, a shift in demand can have a huge influence. Moreover, as there are no substantial pressures on the producers to use eco-friendly materials or processes during production (MŽP, 2021), it is essential to understand the preferences of consumers. Moreover, researchers need to consider that each consumer segment is likely to have different characteristics. For instance, Verain et al. (2015) find that various groups of consumers inhibit different characteristics in relation to sustainable consumption. Identification of characteristics of consumer groups may be essential for functional intervention design (Vanhonacker & Verbeke, 2009; Verain et al., 2015; Verain et al., 2012) or product strategies (Gazdecki et al., 2021). Montano & Kasprzyk (2015) assess that the Theory of Planned Behavior (TPB) and the Theory of Reasoned Action (TRA) are both proven to be valuable tools for the prediction and explanation of various health-related intentions and behaviors among consumers. Moreover, the insights can lead to the creation of successful behavior-changing interventions (Montano & Kasprzyk, 2015). Finally, implementing policies that will motivate consumers to sustainable consumption is vital for the successful employment of a circular economy and environmental protection.

As highlighted above, in line with the desired transition towards a circular economy („Cirkulární Česko 2040“), the goal of this thesis is to uncover predictors of bottled water consumption frequency, on a sample of the Czech population. Similar research has not been conducted in the Czech Republic to my knowledge and I intend to fill this gap. In addition, this thesis follows a TPB, as it proved to be relevant for successful policy design (Montano & Kasprzyk, 2015), with the extension of testing the relevance of habits. Consequently, the results obtained from the analysis could provide helpful insights for policymakers and a basis for further research.

Finally, it is important to note that tap water is frequently discussed throughout the thesis, as it is a natural (and favorable) substitute for bottled water. Nonetheless, only an analysis of bottled water consumption is conducted.

The remainder of this thesis is structured as follows: Chapter 2 provides a comprehensive literature review on the theoretical background, green purchasing, green consumer behavior in the Czech Republic, and determinants of tap/bottled water consumption. Tested hypotheses are presented at the end of this chapter. Chapter 3 describes data collection and measurement and provides descriptive statistics of the relevant variables. Chapter 4 reports on the methodology used. Chapter 5 presents results obtained from the regressions. Chapter 6 provides a discussion of results from Chapter 5, while also describing potential limitations, implications, and extensions of the thesis. Finally, Chapter 7 is dedicated to the conclusion.

2 Literature Review

2.1 Theoretical Background

In studying consumer behavior, this thesis stems from behavioral economics. People often fail to act rationally, as there exists a gap between their interests, values, and final actions (Frederiks et al., 2015). Consequently, while neoclassical economics should not be rejected, behavioral economics is believed to enable a higher prediction of human behavior as insights from psychology are added to the standard economic model (Camerer & Loewenstein, 2002).

This thesis is inspired mainly by the Theory of Planned Behavior (TPB) proposed by (Ajzen, 1985, 1991), which is an extension of the Theory of Reasoned Action (Fishbein & Ajzen, 1975). TPB is used by researchers in an attempt to explain why people engage in certain behaviors. The central assumption is that the conscious intention to act is a key determinant of actual behavior. This intention is further influenced by attitudes, perceived behavioral control, and subjective norms (Ajzen, 1991).

A stream of research confirming the considerable predictive power of intentions on actual behavior exists (Armitage & Conner, 2001). Consequently, many authors focus on determining of main predictors of consumers‘ intentions to engage in certain behavior. This is found to be true even in the modeling of the pro-environmental behavior (Steg & Vlek, 2009). Thus, the TPB is followed by a majority of researchers in studying sustainable consumption of products (e.g., Bamberg, 2002; Costa et al., 2021; Joshi et al., 2021; Verbeke & Vackier, 2005; Wang et al., 2014). For instance, TPB is considered to be a relevant theory for organic food choice assessment (Aertsens et al., 2009).

A considerable amount of attention has been given to possible extensions of TPB. Many researchers find that consumers often fail to behave in accordance with their intentions. Literature refers to this as the „intention-behavior gap“. This phenomenon is often observed also in the context of green purchasing (ElHaffar et al., 2020; Janssen, 2018; Sheeran, 2002; Sheeran & Webb, 2016). Consequently, there is an attempt to add new determinants to the model with a potentially higher predictive power. For instance, Sheeran & Webb (2016) suggest that failure to do what is intended may be disrupted due to factors such as bad habits, low willpower, disruptive thoughts, competing goals, forgetting to act, missing opportunities to act, or failing to prepare for a certain action. Similarly, Conner & Armitage (1998) explore potential extensions of the TPB model and conclude that habits, belief salience, affective beliefs, self-identity, and moral norms could all be relevant parts of the model. Lastly, in studying the pro-environmental behavior of consumers, Whitmarsh & O'Neill (2010) argue that the predictive power of TPB is very likely to increase when past behavior and self-identity are included in the model.

As suggested above, an inclusion of habits in the TPB is widely discussed in the literature. Ouellette & Wood (1998) suggest that habits are very likely to influence intentions, as people may create positive intentions about frequent past behaviors. So past behavior is likely to influence conscious intention creation. Although the frequency of a certain behavior directly affects habit strength (Ouellette & Wood, 1998), a frequent past behavior does not necessarily have to become a habit (Conner & Armitage, 1998). Nonetheless, a frequent past behavior is often classified as a habit in the literature (Aarts et al., 1998). In relation to consumption, Becker defines habits as „positive relations between past and present consumption“ (Becker, 1992). Moreover, Sheeran (2002) calls to attention that habits should be defined only as actions that one engages in, rather than those one does not do. Another important dimension of habits is context stability. When people find themselves in unstable situations, conscious decision-making is likely to take place, and habit strength decreases. On the contrary, the frequently performed behavior becomes automatic in stable contexts (Ouellette & Wood, 1998). As such, Sheeran (2002) acknowledges that habits may have a role in the intention-behavior gap. This role has been further studied. It is suggested that habits mediate the relationship between intention and behavior (Klöckner & Blöbaum, 2010), and between personal norms and behavior (Klöckner & Matthies, 2009). Consequently, it appears that habits together with personal norms and intentions are direct predictors of behavior (Klöckner, 2013). The importance of habits in relation to green purchasing behavior is widely noted in the literature too (Peattie, 2010). For instance, in the setting of sustainable behavior, not remembering to act upon one’s intention has been linked to energy-saving by consumers (Corradi et al., 2013). In addition, environmental cues can enable the automatic activation of habitual behavior when one is present in a stable context (Aarts et al., 1998)

Potential barriers deterring people from acting on their intentions should not be overlooked. An important aspect pointed out by Russell & Fielding (2010) is actual control over one‘s behavior, as it is likely to hinder one’s intention to perform a certain action. The authors explain this on an example of water conservation. In the case of water consumption, this might imply that if consumers intend to drink tap water, but for example do not have access to it (i.e., do not have actual control) this will negatively impact their intentions to drink tap water.

2.2 Green Purchasing

Consumers influence a marketplace through their demand for products. Their participation is therefore crucial for a successful transition toward the circular economy. It is then important to understand what drives consumers to engage in green purchasing, rather than displaying unsustainable behavior. Green purchasing refers to consumer purchasing behavior, where the desired items are more environmentally friendly, and/or have lesser adverse health effects, than their counterparts. As such, green purchasing can take many forms. Consumers can get engaged by basing their decision-making on several product attributes, or their combinations. In the case of food and drinks, these could include product origin, production techniques, packaging, and others.

It is important to note that green purchasing can take many forms. Consequently, in the literature, authors need to specify their understanding of green purchasing, i.e., the explained variable of the model. According to Wijekoon & Sabri (2021), so far, the most studied were green products in general, organic food and beverages, electronics, cosmetics, and others.

2.2.1 Determinants of Green Purchasing

There exist various factors influencing green purchasing. Many authors acknowledge the division of determinants into three main categories: individual, social, and external (Liobikienė & Bernatonienė, 2017; Zhang & Dong, 2020). There are inconsistencies in findings within all three categories in the literature, and a lack of consensus among the researchers about the definite key drivers of green purchasing behavior (Katt & Meixner, 2020; Kaufmann et al., 2012; Liobikienė & Bernatonienė, 2017; Wijekoon & Sabri, 2021; Zhang & Dong, 2020).

As research on green purchasing started to emerge, initially, the main area of focus were individual characteristics. Based on a comprehensive overview of the current literature, Wijekoon & Sabri (2021) identify attitudes, environmental concern, knowledge, perceived behavioral control, and subjective norms as the explanatory variables used with the highest frequency. Additionally, Liobikienė & Bernatonienė (2017) conclude that perception of consequences or health consciousness are factors that are less explored in the literature. Considerable influence is seen from the side of social enablers as well. Liobikienė & Bernatonienė (2017) find that many studies confirm the significance of social context. This link is found to be stronger in collectivistic countries (Kaufmann et al., 2012; Liobikienė & Bernatonienė, 2017).

While some authors only focus on green purchasing in general, it might be useful to study a specific category of goods. For instance, a differentiation between durable and non-durable goods might be essential as the nature of consumer decision-making can vary for each group. The focus of this thesis is given to non-durable goods, more specifically the consumption of bottled water. In general, non-durable goods have a short life expectancy. I will summarize the available literature on some of these items that were studied under green purchasing. Literature on water consumption is given attention in a special section.

One example of non-durable goods that can be most relatable to tap water is (organic) food and beverages. In studying the literature on a willingness to pay for organic products, Katt & Meixner (2020) stress the importance of demographic factors. The authors find that there do not seem to be differences among various countries in terms of age, gender, and education. Nonetheless, income appears to matter based on the economic development of the country, as organic food represents a more luxurious commodity in low-income countries compared to their counterparts (Katt & Meixner, 2020). Simialrly, Witek & Kuźniar (2020) find that with higher financial security, individuals are more likely to show intentions for green product purchasing. Moreover, environmental concern and health attitudes are also important determinants of willingness to pay for organic food (Katt & Meixner, 2020; Liobikienė & Bernatonienė, 2017; Verbeke & Vackier, 2005). More specifically, being concerned for one's health can be a crucial predictor of organic food purchases (Rana & Paul, 2020).

Environmental attitudes are widely discussed in connection to green purchasing. Many researchers find evidence for their importance (e.g., Chekima et al., 2016; Patak et al., 2021; B. Wang et al., 2019). For instance, Katt & Meixner (2020) note that people who continuously engage in recycling and/or organic food purchasing are willing to pay more for these products. Nonetheless, Hoek et al. (2017) conclude that the connection between food and the environment is often not regarded by consumers, while the impact of food behavior on health is considered frequently. Similarly, Waldman et al. (2023) note that sustainable consumption is greatly influenced by convenience, rather than the environmental outcomes of such behavior. In this respect, Janssen (2018) finds that convenience has a negative impact on organic food purchases. Finally, Caniëls et al. (2021) show that environmental concern or friendliness can be mediated simply by a desire to „look good". Therefore, environmental attitudes may not always be a predictor of green purchasing. Nevertheless, its importance should be analyzed, as there appear to be mixed results.

An important issue is also the availability of environmentally friendly products. This can be translated to the actual control discussed before. Consequently, the availability of appropriate products is a crucial determinant of environmentally friendly consumption (Steg & Vlek, 2009). Vermeir & Verbeke (2006, 2008) explain that even when consumers show positive attitudes toward green products, their intentions to buy them are lowered by their perceived unavailability. Similarly, Buder et al. (2014) suggest that green consumers fail to buy organic products mostly when not accessible. Finally, even perceived barriers in terms of price, product availability, poor labeling, and time costs are found to significantly affect both attitudes and intentions to engage in green purchasing (Pham et al., 2019).

2.2.2 Green Consumer Behavior in the Czech Republic

Many authors choose to perform their research on a sample of people from post-communist countries because it is likely to be defined by different characteristics compared to western cultures. Research on green purchasing in the Czech Republic is not extensive. Nonetheless, below, I provide a description of Czech consumer behavior connected to green purchasing found in the literature.

There is a wide consensus among researchers on the importance of food quality. As such, it appears to be a key driver of sustainable food consumption in the Czech Republic. For instance, farmers' markets most likely started to emerge especially due to dissatisfaction with the food quality found in conventional retail stores (Zagata, 2012). In this context, quality as a predictor of green purchasing appears to be even more important than environmental or other concerns (Spilková & Perlín, 2013). For instance, further research suggests that generation Y has strong preferences for environmentally friendly products and is willing to pay a premium price, given that the products remain high-quality (Průša & Sadílek, 2019). Moreover, Navrátilová et al. (2019) note that in addition to environmental friendliness and quality, young Czech consumers also care about product origin. Nonetheless, quality is not the only determinant, as Sadílek (2020) finds that price, product origin, appearance, and taste also influence consumers' purchase decisions. Moreover, Klapilova Krbova (2016) observes that discounts on products are extremely important for Czech consumers.

As the importance of product quality rises among Czech consumers, retailers respond by adding organic and locally grown food into their inventories (Severová et al., 2021). Organic food is understood by Czech consumers as food that does not contain chemicals, thus it is beneficial for health (Zagata, 2014). The researcher continues to show that social aspects or animal welfare are less important to the Czechs in this context.

It should be noted that the market for organic food is still not very big in the Czech Republic. It is reported that the market share of organic food was only 1.5% in 2019 (CENIA, 2021b) and 1.8% in 2021 (CENIA, 2022). This insight might be connected to the finding that Czech consumers appear to focus on the quality of the final product (food), rather than the process quality (Zagata, 2012).

2.3 Determinants of Tap and Bottled Water Consumption

The main stream of research on water consumption highlights several groups of factors influencing the consumers‘ drinkable water choice. These groups include organoleptic characteristics, health-related reasons, convenience, price, environmental aspects, and sociodemographic characteristics (Zvěřinová, Chadimová, et al., 2022).

Organoleptic characteristics of food are features such as taste, smell, texture, color, and others. There is prevalent evidence in the literature that these are a few of the main drivers of water choice (i.e., tap or bottled water) among consumers (Ballantine et al., 2019; Choate et al., 2018; Delpla et al., 2020; Dupont et al., 2010; Espinosa-García et al., 2015; Levêque & Burns, 2017, 2018; Scherzer et al., 2010; Linden, 2015; Viscusi et al., 2015). Perhaps the most influential organoleptic characteristic appears to be taste. The taste of bottled water is often found to be preferred to that of tap water (Geerts et al., 2020). Consequently, one of the biggest barriers that discourage people from drinking tap water appears to be its taste (Graydon et al., 2019). This is then in accordance with the extensive stream of literature labeling taste as the main driver of food choice in general (e.g., Moskowitz & Krieger, 1995; Verbeke & Vackier, 2005)

The second group of factors is health-related. For many people, water safety is still a concern. As such, drinking tap water can be perceived as risky for some consumers. Many researchers find that people consider tap water to be less healthy and less safe compared to bottled water (Ballantine et al., 2019; Bass et al., 2022; Cohen & Ray, 2018; Delpla et al., 2020; Geerts et al., 2020; Jones et al., 2007; Linden, 2015).

These health concerns are shared especially among women (Graydon et al., 2019; Javidi & Pierce, 2018), individuals with low levels of education (Levêque & Burns, 2017), and minorities (e.g., Hispanic, African American) (Graydon et al., 2019; Viscusi et al., 2015). Moreover, people who belong to minorities tend to rate even the quality of tap water as poor (Javidi & Pierce, 2018). Moreover, Gorelick (2011) find that within these minorities, parents prefer to give bottled water to their children. Similarly, Weisner et al. (2020) divide their selected neighborhoods into three groups by socio-economic status. They find that people from such low-status neighborhoods are more likely to dislike their tap water and thus consume bottled water, compared to their counterparts.

It is important to understand the implications of concerns about water quality and safety mentioned above. Risk perceptions are very likely to impact health-related decision-making (Ferrer & Klein, 2015). In line with this theory, when considering tap water as unsafe for drinking, or otherwise risky, people are found to consume more bottled water (Anadu & Harding, 2000; Dupont et al., 2010; Hu et al., 2011; Juba & Tanyanyiwa, 2018; Linden, 2015; Regnier et al., 2015; Viscusi et al., 2015; Wright et al., 2018). Linden (2015) adds that the size of this effect is also mediated by the frequency of bottled water consumption. These findings are supported also by an analysis of household expenditures. It is confirmed that with higher perceived risks of tap water, the expenditures on bottled water rise (Jakus et al., 2009).

A process of perception formation is also substantial. Ferrer & Klein (2015) note that risk perceptions are formed (among others) also based on personal experiences. It then makes sense to suggest that past experiences play an important role. The perceptions created at home and their effect when one is in a different setting have been studied by Levêque & Burns (2018). The authors perform their study on a sample of students. They conclude that when negative perceptions about tap water are formed at home, students are found to consume bottled water even in locations with safe tap water. There exist also other factors that have been linked to tap water perceptions. For instance, education or income are found to influence the perceptions of tap water quality (Pierce & Gonzalez, 2017). Nonetheless, it should be noted, that negative perceptions of tap water do not necessarily have to be the only driver of bottled water consumption. As such, higher consumption of bottled water seems to be motivated by positive perceptions towards it (Viscusi et al., 2015), as well as negative perceptions towards tap water (Wright et al., 2018). Moreover, Delpla et al. (2020) also find that satisfaction with tap water can be significantly mediated by risk perceptions, as well as the water treatment (e.g., water filtering), and knowledge.

Another factor that has been studied in relation to bottled water intake is its price. Bottled water is relatively more expensive than tap water (Cohen & Ray, 2018). Consequently, it would be expected that consumers will prefer tap water. Nonetheless, there is evidence that the higher cost of bottled water relative to tap water is not a barrier to the purchase of bottled water (Etale et al., 2018). A preference for a lower price is observable only within the water type category. When presented with various alternatives of bottled water, people prefer items with lower price (Grebitus et al., 2020). In line with these findings, many researchers acknowledge the importance of marketing techniques. It is argued that marketing is a factor that should not be neglected (Doria, 2010; Saylor et al., 2011).

Tap water safety is most often ensured by a local municipality. It then appears to be crucial, whether people trust in the local authority‘s ability to do so properly. A very important predictor of bottled water consumption is found to be a distrust in the local authorities that are responsible for the safety and quality of tap water (Doria, 2010; McSpirit & Reid, 2011; Parag & Roberts, 2009; Saylor et al., 2011; Scherzer et al., 2010). Moreover, information about the mismanagement of water safety and/or quality can become available to the public. For instance, Zivin et al. (2011) find that when such information appears, consumers respond by switching to bottled water.

Some research has been conducted on a sample of university students. Arriaga-Medina & Piedra-Miranda (2021) find that although only a small proportion of students consider water from school fountains to be of bad quality, a majority of still prefers to drink bottled water. Levêque & Burns (2018) also suggest that female students are more likely to drink bottled water at home compared to males. In their experiment, Santos & Linden (2016) find that when provided with reusable bottles, students become more likely to drink tap water, and to support a campaign on banning plastic bottles on campus.

Another factor that has been given attention are norms and their connection to behavioral change. Higgs (2015) explains the importance of norms due to their connection to social judgement when uncertainty about appropriate behavior is present. As such, the norms then have the ability to alter one's self-perceptions and/ or evaluations of food and consequently affect the final food choice (Higgs, 2015). In accordance with this theory, there is evidence of a link between social norms and bottled water consumption (Etale et al., 2018; Geerts et al., 2020; Qian, 2018). The subjective norms concerning the reduction of bottled water consumption are also linked to the intention to change one's behavior, together with perceived self-control (Borusiak et al., 2021). In addition, Linden (2015) points out that for frequent users of bottled water, it represents a bigger barrier to change their behavior. As another important aspect within a social context, in countries such as Switzerland, or Germany consumption of tap water during a social gathering, or offering guests tap water instead of bottled one, is considered to be inappropriate (Etale et al., 2018).

A very important contextual factor is the convenience of consuming a good. As such, the convenience of bottled water is found to be linked to its consumption (Jones et al., 2007; Qian, 2018; Viscusi et al., 2015). Nonetheless, there also appear to be some inconveniences linked to bottled water as well. For instance, Etale et al. (2018) find that the cumbersome transportation of bottled water represents such an obstacle for consumers and consequently increases the likelihood of drinking tap water.

The consumption of water is studied also in terms of socio-demographic characteristics. There appears to be a consensus among researchers regarding education, and disparities in conclusions about gender and age. In certain studies, higher likelihood of drinking bottled water is found among men (Etale et al., 2018; Geerts et al., 2020; Ragusa & Crampton, 2016; Westrell et al., 2006), in others among women (Levêque & Burns, 2018; Saylor et al., 2011; Wright et al., 2018). Similarly, some researchers indicate older people (Geerts et al., 2020), and some identify young people (Font-Ribera et al., 2017; Ragusa & Crampton, 2016) as the main age group preferring bottled water. People with lower levels of education are consistently linked to higher bottled water consumption (Geerts et al., 2020; Levêque & Burns, 2017). Even in the setting of university students, undergraduates were linked to higher bottled water intake compared to those attending higher levels of education (Choate et al., 2018; Graydon et al., 2019; Saylor et al., 2011).

It is clear that in the case of water consumption, the sustainable action would be to decrease or fully eliminate the consumption of bottled water. It appears that people are aware of the benefits of drinking tap water, in terms of its lower price and environmental friendliness (Graydon et al., 2019). Consequently, environmental concern is linked to the intention to lower bottled water intake (Borusiak et al., 2021). Nonetheless, the effect of environmental concern may be weakened, as some people are found to believe that recycling plastic bottles lowers the negative impact of drinking bottled water (Saylor et al., 2011). People who do not indicate to have high levels of environmental concern are more likely to buy bottled water (Levêque & Burns, 2017, 2018). Within this context, women are found to show more environmentally-friendly attitudes (Casaló & Escario, 2018) and climate change concerns (McCright, 2010) compared to men. And in Pennsylvania, parents seem to prefer to give tap water to their children (Merkel et al., 2012). The authors also point out that parents are likely to do so due to their environmental concerns, but at the same time there is evidence that concerns about tap water safety exist.

Finally, a set of policies should be designed to encourage consumers to drink tap water instead of bottled alternatives. Guidance toward sustainable behavior is found to be an effective nudge resulting in people's choice of more environmentally friendly packaging of water bottles (Grebitus et al., 2020). Similarly, Suárez-Varela & Dinar (2020) propose that policies aimed toward the creation of pro-environmental habits are likely to be the most successful.

2.4 Czech Market for Water Consumption

The description of the Czech market for bottled and tap water consumption is rather complicated, due to limited data. While data exists on the overall water consumption by households and several researchers attempt to estimate price elasticities of residential water demand (e.g., Ščasný & Smutná, 2021), in case of data on water consumption for purposes of drinking, there is limited information.

According to ČSÚ (2022) around 96% of Czech citizens had access to drinkable tap water in their homes in 2021. The average daily consumption increased by 2.11 p.c. in 2021 compared to the previous year. This however does not reveal how much of this water was consumed in form of a beverage. Moreover, the price of tap water also increased to 43.80CZK/m^3 in 2021. ČSÚ (2020) reports that while the consumption of mineral water decreased by 9.2%, an increase of 1% in the consumption of non-alcoholic beverages is observed. ČSÚ (2021) adds that the total consumption of both mineral water and other non-alcoholic beverages decreased in 2020, with mineral water decreasing by 4.4% which corresponds to 2.51 p.c.

Many authors warn that requirements for bottled water often are not stricter than those for tap water. This is often contradictory to consumers‘ beliefs as shown in this Chapter. In official testing of bottled and tap water, Kalouš (2019) concludes that there are no substantial differences in the quality.

2.5 Hypotheses Formulation

Several hypotheses are formulated based on the literature review presented above:

Hypothesis 1: Adverse taste of tap water, or pleasant taste of bottled water is positively associated with bottled water consumption.

Hypothesis 2: Negative health perceptions of tap water, and positive health perceptions of bottled water are positively associated with bottled water consumption.

Hypothesis 3: Environmental values have a negative relationship with bottled water consumption.

Hypothesis 4: Positive attitudes towards tap water consumption have a negative relationship with bottled water consumption.

Hypothesis 5: Subjective norms of drinking tap water are negatively associated with bottled water consumption.

Hypothesis 6: Perceived behavioral control (difficulty) of drinking tap water is positively associated with bottled water consumption.

Hypothesis 7: The habit of drinking tap water has a negative relationship with bottled water consumption.

3 Data

In this chapter, I will describe data collection, provide a list of data used, and specify their characteristics, respectively. Moreover, I describe procedures used for data preparation where necessary. The statistical tests mentioned are closely described in Chapter 4.

3.1 Data Collection

The data source used in this thesis is an original survey using a questionnaire „TAČR Kohoutková“, created by Zvěřinová, Ščasný, et al. (2022). The project development was financed by Czech Technological Agency, and realized by cooperation between Charles University Environment Centre, the National Institute of Public Health in the Czech Republic, and the Czech Water Association. The data collection was administered by European National Panels.

Following a thorough literature review, the researchers developed their own questionnaire. The survey was designed with the aim to identify and analyze factors influencing the consumption of tap and bottled water among Czech consumers. As such, the data were collected solely on the sample of the Czech population. Participation of respondents was voluntary. In that sense, only responses from people who gave consent to their participation in the survey were included. At the beginning of the survey, each respondent was given instructions on participation. Everybody was informed about the purpose of the questionnaire and the approximate time length. Furthermore, respondents were informed about the strict anonymity of all their responses. Finally, the responses were self-reported.

In this thesis, I use cross-sectional data for the analysis of bottled water consumption. The studied sample consists of 3 411 observations. Only observations from fully completed questionnaires are used. Moreover, data collected from respondents identified as „speeders“ were excluded. The sample was selected using quota sampling from an online access panel. The resulting sample is representative of the Czech population aged between 18 to 69 years in terms of socio-demographic and economic characteristics (age, gender, education, household income, and geographic location).

3.2 Data Measurement and Descriptive Statistics

Bottled water consumption is recorded as the frequency of its consumption. Respondents were asked to choose from six ordered alternatives describing the frequency of their bottled water intake. The aim of this thesis is to uncover predictors of bottled water consumption among frequent, occasional consumers, and those who chose not to drink bottled water at all. Nonetheless, several categories needed to be rescaled to avoid issues with too many singular matrixes. These were encountered due to a lack of responses for a category of people who never drink bottled water (<4%), and those who drink it once per day (<8%). This change to the data encompassed merging of the first and second categories, and the fourth and fifth. Consequently, the final variable consists of four ordered categories from 1 to 4. Details can be seen in Table 1 below.

Table 1: Frequency of Bottled Water Consumption

Category	Description	Freq.	Perc.	Category (new)	Freq. (new)	Perc. (new)
1	never	122	3.58%	**1**	**1051**	**30.81%**
2	seldom	929	27.24%			
3	several times per month	728	21.34%	**2**	**728**	**21.34%**
4	several times per week	653	19.14%	**3**	**904**	**26.5%**
5	once a day	251	7.36%			
6	several times per day	728	21.34%	**4**	**728**	**21.34%**

Notes: Freq. = Frequency, Perc. = Percentage

In terms of gender, 49% of surveyed participants are women, and 51% are men. Respondents were also given an option to choose „other“ as their preferred gender.

This answer is given by less than 1% of participants. Consequently, due to its low variation, this group is merged with the female one. Men are used as a reference group for purposes of comparison. Details can be seen in Table A1 in Appendix A.

Age is recorded by asking participants to specify their age in years. The questionnaire is designed to collect information from people that are at least 18 years old. Consequently, as can be seen in Table A4.1 in Appendix A, the minimum age of participants is 18 years, and the maximum is 69 years. The average age of the surveyed people is 44.93 years. For purposes of comparison of different age groups, age is divided into three categories. Belonging to a certain category is depicted by dummy variables in the model. The first category represents younger people. Therefore, it consists of people aged between 18 and 34 years. The second category are middle-aged people with years of age between 35 and 50. The third category consists of older people between 51 and 69 years old. As depicted in Table A2 in Appendix A, in total, 26.68% of respondents belong to the first category, 37.12% to the second category, and 36.21% to the third category. Finally, the middle-aged category is used as a reference group throughout the modeling.

Education is measured by providing survey participants with a list of potential attained levels of education. Similarly to age, for purposes of comparison, education is divided into three groups: lowest, middle, and highest education. The lowest education category consists of people who did not attain higher education than that of vocational school without a baccalaureate. The middle category consists of people who did not attain a higher education level than grammar school. The highest education category contains the rest of the responses, i.e., education level above grammar school. As depicted in Table A2 in Appendix A, lowest category of education is reported by 41.42% of respondents, middle by 37.14%, and highest by 21.43%. Finally, the middle education category is chosen as a reference group.

Household income measures the total monthly income of a household after tax and other deductions and it is described in the questionnaire by several categories as an interval. Since data on the total number of household members is available, a variable describing income per household member can be obtained. Firstly, a midpoint income for each category is obtained. This is done to at least approximate the actual value. Secondly, income is divided by the respective number of household members. The reason behind this procedure is that a high income in a household consisting of x members does not have the same purchasing power as the same amount of income in a household consisting of fewer than x members. Because the income variable is recorded as a categorical variable, its transformation to a continuous variable might encompass a significant measurement error. Therefore, I create three categories of income. The categorization is done on a basis of quartiles (Q). Consequently, the first category includes respondents with income per household member lower or equal to 12 250CZK (Q_1), the second category includes those with income higher than 12 250CZK and lower than 21 000CZK (Q_3), and finally the third category includes those with income higher or equal to 21 000CZK. Consequently, 21.23% of participants belong to low income, 43.21% to middle income, and 20.82% to the high-income category. Association with each category is represented by dummy variables in the model. The middle-income category is used as a reference group. Finally, a dummy variable for missing information on income is incorporated in the model, due to missing answers from almost 15% of respondents. More details can be seen in Table A2 and Table A4.1 in Appendix A.

Employment status is recorded as a categorical variable. Respective categories are then merged into three groups, due to the low variation of certain categories. The first group corresponds to people who are employed (61.10%). This includes people working full-time, part-time, and self-employed people. Non-working people (30.37%) belong to the second group and consist of people who are unemployed, retired, studying, or disabled. Finally, the third group (8.53%) consists of people who are on maternity leave or take care of their home full-time. To avoid the issue of collinearity, the second group (non-workers) is used as a reference group. More details of the descriptive statistics are shown in Table A2 in Appendix A.

Marital status is also recorded as a categorical variable. Similarly to employment status, three categories are created. As shown in Table A2 in Appendix A, the first category consists of people who are in a relationship (62.94%). These include people who are married, in a partnership, or who cohabitate together without being married. The second group corresponds to people who are single and were never in a formal relationship (22.63%). The third group consists of people who are either widowed, divorced or separated from their partner (14.42%). The second group describing single people is used as a reference for purposes of comparison.

Household members and their structure is also used within the analysis. On average, there are 3 household members per respondent. Nonetheless, most of the respondents (33%) live in a household consisting of two members. Moreover, the average number of children living in a household is less than one. Only 14.48% of respondents reported living in a household with at least one child. Similarly, there is on average less than one retired person per household. In this case, living in a household with at least one retired person was reported by 20.05% of respondents. More details can be seen in Table A4.1 in Appendix A.

Environmental values are measured by incorporating several statements related to this construct. Participants are asked to what degree they identify themselves with statements concerning environmental values presented to them. Variable is measured by a Likert scale containing six ratings from one („does not identify me“) to six („identifies me very well“). Higher values indicate positive environmental values. The final variable is constructed by adding three items and dividing them by a respective number (in this case, three). Internal consistency is evaluated using Cronbach's alpha (α=0.88) and McDonald's omega (ω=0.88). Based on these results, it appears that the scale has a good internal consistency as both coefficients are higher than 0.70. As shown in Table A4.2 in Appendix A, the average level of environmental values among Czechs is around 4.36 with st. deviation of 1.43. The minimum value is 0, and the maximum is 6.

Taste is measured as a dummy variable. It has a value of one when respondents indicate that they do not drink tap water too frequently because of its poor taste, or that they drink bottled water because of its pleasant taste. This is reported by 31.96% of respondents. A value of zero is assigned otherwise. More information can be seen in Table A3 in Appendix A.

The health reasons are measured similarly to taste. It is also a dummy variable. As such it has a value of one when respondents indicate they have health-related concerns about tap water, or perceive bottled water as having a beneficial effect on their health. It has a value of zero otherwise. As shown in Table A3 in Appendix A, having health concerns about tap water, or having positive perceptions about the healthiness of bottled water were indicated by 12.84% of respondents.

Attitudes towards tap water consumption are measured indirectly. Following the TPB, they are calculated by aggregation of the belief strength (b_i) weighted by the outcome evaluation (e_i). Consequently, the formula can be written as:

$$Attitudes = \sum b_i e_i$$

Respondents are asked about the degree to which they agree or disagree with certain statements related to their behavioral beliefs, and the potential outcomes of such behaviors. All statements are related to water consumption. A Likert scale with seven possible ratings is used for data collection. A rating of one corresponds to „very bad“ and a rating of seven to „very good“. Higher values of this variable indicate positive attitudes toward tap water. The items are added together as shown above and divided by their respective number. Not all situations presented to the respondents had the same direction, therefore there was a need for reverse coding in some cases. To test for internal consistency, I use Cronbach’s alpha which yields a value of 0.74. To provide a robustness check of this result I also obtain McDonald’s omega equal to 0.84. Both coefficients being above 0.70 suggests that the internal consistency of the items is good. Descriptive statistics show that on average, the attitudes have a value of 29.24 with st. deviation of 9.00. Further details can be seen in Table A4.2 in Appendix A.

Subjective norms are also measured indirectly. They refer to perceived norms or pressures of one’s social context to engage in certain behavior. Therefore, these do not have to be actual norms, i.e., they are subjective. Within this thesis, variable describing subjective norms referring to tap water consumption is obtained. Consequently, higher values of subjective norms indicate higher perceived social pressure to drink tap water. Following the TPB, subjective norms are then calculated by an aggregation of normative beliefs (n_i) (i.e., perceived norms of the social context) weighted by the respondent’s attachment to the individual (s_i) (i.e., the degree to which respondents wants to conform) Consequently, the formula can be written as:

$$Subjective\ norms\ = \sum n_i s_i$$

Measurement is conducted in both cases with the use of the Likert Scale. For normative beliefs, the ratings are from one („definitely not") to seven („definitely yes"). For respondents' attachment to the individual, the ratings are from one („I do not care at all") to seven („I care a lot"). The items are summed up as shown above and divided by a respective number. Cronbach's alpha is used to test for the internal consistency of the final scale. The resulting alpha is 0.78. Similarly, McDonald's omega coefficient is calculated with resulting value of 0.84. Therefore there is evidence that the scale can be used. By conducting the procedure of final variable creation, continuous data with a minimum value of 0, and a maximum of 49 are obtained. As shown in Table A4.2 in Appendix A, the average value corresponds to 16.98 with st. deviation of 11.16. Higher values indicate stronger norms, i.e., stronger perceived influence of the social context to drink tap water.

Perceived behavioral control refers to control beliefs (c_i) weighted by a power of these beliefs (p_i). As such, it is measured indirectly. The formula can be written as:

$$Perceived\ behavioral\ control\ = \sum c_i p_i$$

In this case, the researchers also use a Likert scale with 7 possible ratings. To measure control beliefs, respondents are asked about the frequency with which they experience difficulty of accessing tap water at restaurants, cafes, petrol stations, and other public places. Consequently, a rating of one corresponds to „almost never happens" and a rating of seven to „happens all the time". The power of the beliefs is measured by asking respondents a degree to which they agree on the power of certain situations on drinking tap water. A rating of one corresponds to „definitely disagree" and a rating of seven to „definitely agree". Items incorporated within this question battery are then added together as shown above and divided by a respective number. In this case, there are three statements, therefore a division by three is used. Finally, higher values of this variable indicate higher perceived difficulties of drinking tap water. Test for internal consistency is provided by Cronbach's alpha. The value of alpha is 0.75. The robustness of this result is tested with the use of McDonald's omega, which equals 0.75. This indicates that the data procedure is acceptable as both coefficients are above 0.70. The descriptive statistics as depicted in Table A4.2 in Appendix A show that the average value corresponds to 19.45 with st. deviation of 11.30. Moreover, the minimum value is 1, and the maximum is 49.

Habits are measured as habits of drinking tap water automatically. A 7-point Likert scale is used for this data gathering. The battery contains two items describing such automatic behavior. To test for internal consistency, Cronbach's alpha of 0.80, and McDonald's omega of 0.71 are obtained. Good internal consistency is suggested as both coefficients are above 0.70. Consequently, the final variable is created by adding the two items and dividing them by their respective number. As such, it has a minimum of 1, and a maximum of 7. Higher values indicate a stronger habit of drinking tap water. Descriptive statistics in Table A4.2 in Appendix A show that on average, respondents have a habit value of 4.97 with st. deviation of 1.88.

4 Methodology

In this Chapter, I will first provide a description of the procedures used in data gathering and preparation. Secondly, I provide an overview of the models used for econometric analysis. I also explain the reasons for the choice of specific models. The models are estimated with STATA software.

4.1 Likert Scale

A Likert scale is a measurement tool originally proposed by Likert (1932) in an attempt to measure people's attitudes.[2] The author argues that people exhibit quantitative differences in their attitudes. Ranging from lowest to highest value, it is usually used for measurement of satisfaction, agreement, belief strength, and others (Allen & Seaman, 2007), by providing respondents with both real and hypothetical statements (Y. Joshi et al., 2021). As such, each rating is assigned a number. The scales used by researchers usually have five, seven, or even nine ratings (Bertram, 2007). The author further explains that Likert scales are „unidimensional in nature", and highlights the advantages of using Likert scales, such as easy construction, potential production of a scale with high reliability, and comprehensiveness.

Data collected via the Likert scale are then usually further analyzed. Bertram (2007) explains that items can be analyzed separately, or they can be summed. Separate items are then treated as ordinal, while summed ones as interval data (Bertram, 2007; A. Joshi et al., 2015). Characterization of the data type is essential, as researchers need to use different approaches for their analysis (e.g., parametric vs. non-parametric). With ordinal data, it cannot be assumed with certainty, that distances between any two consecutive values are equal. On contrary, this assumption holds for interval data. Nonetheless, by providing a comprehensive literature review, Norman (2010) argues that the use of the Likert scale for parametric statistics is well-founded.

[2] For the most recent developments on the Likert scale, see Jebb et al. (2021).

Another important issue that needs to be considered is the scale reliability. As Likert (1932) notes, one should test for correlations between single items and a battery to assess whether the same construct is being measured by all items within the battery. In this context, a reliability estimator that is used with the highest frequency is Cronbach's alpha (described below). Nonetheless, the coefficient omega proposed by McDonald (1999) is often used when assumptions of alpha are violated (Jebb et al., 2021).

4.2 Testing for Internal Consistency

In certain cases, procedures concerning data preparation require an assessment of internal consistency. This is measured by the vast majority of researchers through Cronbach's alpha. It is useful in situations when a researcher assumes that multiple items measure the same construct. As such, the items should be highly correlated. Cronbach's alpha then measures the extent to which groups of items are related to each other by calculating the inter-item correlations between all possible pairs of items. The minimum number of items needed for alpha computation is two (STATA, 2021).

Cronbach's alpha is proposed by Cronbach (1951). It is measured by the following formula:

$$\alpha = \frac{N}{N-1} * \left(1 - \frac{\sum s_i^2}{s_X^2}\right)$$

where N is a number of items, s_i^2 is variance of individual items i, where i=1,...,N, and s_X^2 is variance of all items of the scale.

The resulting value of alpha is a number between 0 and 1. Consequently, an alpha equal to or close to zero would indicate poor or no correlation between items. A minimum value of alpha beyond which the coefficient is widely accepted is 0.70 (Taber, 2018). High values are an indication that the items are measuring a similar construct. Moreover, to ensure the final scale measures consistently the same thing, Cronbach's alpha is often used as a reliability analysis (McNeish, 2018).

In order for Cronbach's alpha to provide consistent results, there exist several assumptions (tau equivalence, normal distribution, unidimensionality, and uncorrelated errors) that need to be satisfied.[3] There exists a stream of research pointing out a high sensitivity of alpha to violation of its assumption. Nonetheless, in empirical research, a vast majority of scientists still use this coefficient as a measure of the internal consistency of their data (McNeish, 2018).

McDonald's coefficient omega proposed by McDonald (1999) is often advised as a favorable alternative to Cronbach's alpha (McNeish, 2018; Revelle & Zinbarg, 2009; Trizano-Hermosilla & Alvarado, 2016). While Cronbach's alpha assumes that each item contributes to the total score of the scale equally (tau equivalence), it is not the case for McDonald's omega. This assumption is relaxed for the latter coefficient. The omega coefficient acknowledges that items contribute to the overall scale but to a different extent (congeneric scales). As Raykov (1997) points out, there can be a different degree of relationship between various items and a final latent variable. Consequently, when assumptions of the alpha coefficient are violated, omega corrects for the bias (Trizano-Hermosilla & Alvarado, 2016). Moreover, when tau equivalency is satisfied, McDonald's omega and Cronbach's alpha both yield the same results (McNeish, 2018).

A calculation of McDonald's omega is based on the factor loadings. A formula is given by:

$$\omega = \frac{\left(\sum_{i=1}^{k} \lambda_i\right)^2}{\left(\sum_{i=1}^{k} \lambda_i\right)^2 + \sum_{i=1}^{k} \theta_{ii}} \qquad i = 1,2,\ldots,k$$

Where λ_i is the i-th factor loading of the scale, θ_{ii} is the error variance of the i-th item, and k is the number of items of the scale. Results interpretation is analogous to that of Cronbach's alpha.

[3] A comprehensive overview of these assumptions is provided by McNeish (2018).

4.3 Generalized Ordered Logit

The dependent variable (frequency of bottled water consumption) is ordinal. When filling out the survey, respondents do not necessarily have to attribute equal distances between each pair of consecutive ratings. Thus, it cannot be assumed with certainty that the distances between categories are identical, however, there is a logical relative ordering of the data that is known.

Based on the data structure, the initial goal was to estimate an ordered logit for the analysis of bottled water consumption. This model has several assumptions. One of these is called the proportional odds assumption, or parallel slopes assumption. This requires that a relationship between any two outcome groups is the same (UCLA, 2022). In other words, the results of estimated coefficients from series of binary logistic regressions should be the same across these regressions. For instance, for three categories of the dependent variable, the logistic regressions would be as follows: First regression would compare category 1 against categories 2 and 3. The second regression would compare categories 1 and 2 against category 3. For the case of four categories, the binary regressions would be constructed analogously, i.e., we would have three logistic regressions. To assess whether the assumption holds, UCLA (2022) advocates a use of the Brant test proposed by Brant (1990). This test compares the estimated coefficients across the binary logistic regressions as described above. It is then evaluated whether the deviations can be attributed to more than chance alone. Results are observable for each variable. Significant test signals that the parallel slopes assumption is violated, i.e., that the deviations are too high. Not all predictors necessarily need to violate this assumption. Within the analysis of this thesis, such violation is observed in the case of several predictors, but not all of them. Consequently, there was a need to consider alternative methods of modeling.

There exist some advantages of using Generalized Ordered Logit (GOL) when the parallel slopes assumption does not hold. Nonetheless, in such instances, researchers often tend to either keep the ordered logit model anyways or use Multinomial Logit (MNL). The use of an ordered logit model even in cases when the assumption is violated leads to „incorrect, incomplete, and misleading results“ (Williams, 2006). In the case of MNL, the author further explains that the use of GOL is a better choice since MNL estimates more parameters than might be necessary. On contrary, GOL enables researchers to impose solely partial parallel slopes assumption. This means that only predictors that satisfy the assumption are restricted within the regression (i.e., only one coefficient is estimated for each of them). As such, there are fewer parameters estimated compared to MNL. Therefore, the interpretation is more parsimonious in the case of the former model. Another drawback of MNL is that the dependent variable is no longer considered to be ordered. In this model, the dependent variable is taken as a nominal. Thus, there is no logical relationship between the categories. On contrary, GOL is used for dependent variables that are ordered. As such, higher values correspond to „higher" outcomes. In this case, higher values correspond to higher bottled water intake. This is another advantage of GOL compared to MNL. Finally, an important assumption that needs to be satisfied for the correct use of MNL is the independence of irrelevant alternatives. According to this assumption, the odds ratios should be independent of any other alternatives. This stems from the assumption of homoscedastic and independent disturbances (Greene, 2012). The author further suggests that this could be especially problematic for consumer behavior modeling. Consequently, this is another indication that MNL may not be the most suitable choice for the analysis conducted within this thesis. Nonetheless, this model is still widely used among researchers and can provide a valuable robustness check of the results.

Firstly, GOL enables a researcher to impose the parallel slopes assumption either solely on several variables, or on all of them. In general, the GOL can be written as:

$$P(Y_i > j) = \frac{\exp\,(\alpha_j + X_i\beta_j)}{1 + \{exp(\alpha_j + X_i\beta_j\}} \quad , j = 1,2, \ldots, N-1, i = 1,2, \ldots M,$$

where N corresponds to the number of categories of the dependent variable, M to the number of independent variables, j to a j-th category, X_i to an i-th variable, β_j to coefficient corresponding to category j, α_j to a constant corresponding to category j, and P is the probability that Y falls into the category above j. In the partial proportional odds model, β_j is estimated for variables X violating parallel slopes assumption, while β is estimated for those that do not.

Secondly, it is essential to explain the relationship between GOL, ordered logit, and logit models. Ordered logistic regression is a special case of GOL. As such, when the assumption or parallel slopes is not violated, both models should produce the same coefficients β. Consequently, when the assumption holds, the model will take the following form:

$$P(Y_i > j) = \frac{\exp\,(\alpha_j + X_i\beta)}{1 + \{exp(\alpha_j + X_i\beta\}} \quad ,j = 1,2,\ldots,N-1$$

For a dependent variable that only has two categories (i.e., N=2), GOL and logit are equivalent. For N>2, a GOL will also provide equivalent results to those of a series of binary logistic regressions with categorized dependent variable (Williams, 2006).

For a dependent variable with M categories, the GOL estimates M-1 sets of coefficients. Hence, in this case, there will be three sets of coefficients. Finally, the interpretation of the model is as follows: Positive coefficient indicates that one unit increase in the independent variable corresponds to an increase in the log-odds of being in the higher categories than j. Conversely, a negative coefficient suggests that with one unit increase in the independent variable, there are higher log odds of being in category j or lower category.

Finally, there will be firstly a partially restricted GOL model estimated with three sets of coefficients. Secondly, marginal effects with four sets of coefficients will be obtained. Being a partial derivative, these will describe the effect of a marginal increase in the predictor, on the probability of belonging to category j of the dependent variable.

4.3.1 Model Specification

The model is specified as follows:

$$
\begin{aligned}
y_i = \alpha_0 &+ \beta_1\, woman_i + \beta_2 agelow_i + \beta_3\, agehigh_i + \beta_4\, edulow_i \\
&+ \beta_5\, eduhigh_i + \beta_6\, inclow_i + \beta_7\, inchigh_i + \beta_8\, missinginc_i \\
&+ \beta_9\, working_i + \beta_{10}\, athome_i + \beta_{11}\, relationship_i \\
&+ \beta_{12}\, lostpartner_i + \beta_{13}\, retired_i + \beta_{14}\, children_i + \beta_{15}\, enviro_i \\
&+ \beta_{16}\, taste_i + \beta_{17}\, health_i + \beta_{18}\, attitude_i + \beta_{19}\, norm_i \\
&+ \beta_{20}\, behcontrol_i + \beta_{21}\, habit_i + \epsilon_i
\end{aligned}
$$

where y is the dependent ordinal variable describing the frequency of bottled water consumption, α_0 is the intercept, $\beta's$ are the coefficients to be estimated, ϵ is the error term, and i is the i-th observation. Independent variables are gradually added to the model. In total, there are five models. The first includes gender, age, income, and education. The second adds marital and employment status, and the number of retired people and children in the household. The third model adds environmental values, taste, and health reason. Fourth model adds constructs from the TPB, i.e., attitudes, subjective norms, and perceived behavioral control. Finally, the fifth model adds habits of drinking tap water.

4.4 Robustness Check – Multinomial Logit

MNL is used to test for the robustness of the results provided by the GOL. As stated above, this model takes the dependent variable as nominal, i.e., unordered. Moreover, the model is not restricted, thus there will be more parameters estimated and interpreted. Nonetheless, as this model is still frequently used instead of ordered logit when the parallel slopes assumption does not hold, it appears to be a reasonable choice for a robustness check.

The response probabilities of the model can be written as follows:

$$P(Y_i = j|x_i) = \frac{exp(x_i' * \beta_j)}{\sum_{n=1}^{N} exp(x_i' * \beta_n)}, \quad j = 1,2,\ldots,N$$

where P is the probability that Y equals j given x_i, and N is the total number of alternatives. Probabilities sum up to one, hence, to find N parameters, only an estimation of N-1 parameters is necessary. Thus,

$$P(Y_i = j|x_i) \ = \frac{exp(x_i' * \beta_j)}{1 \ + \sum_{n=2}^{N} exp(x_i' * \beta_n)}, \quad j = 1,2,\ldots,N$$

The interpretation of results is in terms of relative log odds as follows: Ceteris paribus, a positive coefficient indicates that with one unit increase in the independent variable, the respondent is more likely to be in the observed category, over the alternative base category. Conversely, a negative coefficient indicates that the respondent is less likely to be in the observed category over the alternative.

To conclude, I first consider the estimation of ordered logistic regression. To assess the proper use of this model, I perform a Brant test. The results reveal that several variables do not satisfy the assumption of parallel slopes. Because only a minority of the variables violates this assumption, according to (Williams, 2016) GOL appears as a superior solution to both ordered logit and MNL. Nonetheless, because of its wide use, MNL is used as a robustness check of the results.

5 Results

In this chapter, I present results from the models described in Chapter 4. I firstly interpret the results of the GOL, and secondly describe their robustness tested with MNL. The gradual addition of independent variables to the model resulted in five models. Coefficients of the predictors of bottled water consumption are interpreted mainly for the last model containing all independent variables. All the results are presented on a Ceteris Paribus basis. Results from the estimation of GOL can be seen in Appendix B in Tables B1-B5, with marginal results in Table B6. Results from MNL estimation are to be found in Table B7 in Appendix B.

5.1 Generalized Ordered Logit

Since the dependent variable (frequency of bottled water consumption) has four categories, the model estimated three sets of coefficients. More than half of the variables satisfied the parallel slopes assumption. In total, there were 39 coefficients estimated in the last regression. Furthermore, the gradual inclusion of variables increased the pseudo R^2 in each case.

Gender resulted in being statistically significant in comparison of categories 1,2 and 3, against 4 only. As such, compared to men, women are more likely to drink bottled water several times per day. Moreover, the marginal effects also indicate that women are 3.3% ($p<0.05$) more likely to drink bottled water several times per day, compared to men. These results suggest, that while consumption of bottled water does not differ among men and women in any of the lower categories, being a woman is associated with more extreme responses.

Age is analyzed by comparing young and older people to the middle-aged group. In this case, the parallel slopes assumption holds only for older people. Therefore, three coefficients are estimated for the dummy variable describing young people, and only one for older people. Firstly, compared to the middle-aged group, younger people are associated with having higher log odds of drinking bottled water at least several times per month, but not more than once a day. Marginal effects show that younger people are almost 5% ($p<0.001$) less likely to drink bottled water several times a day and 4.4% ($p<0.05$) less likely to drink it never or only seldom. On contrary, they are 6.7% ($p<0.01$) more likely to drink bottled water several times per month, compared to the middle-aged group. It then appears that younger people are less likely to be in any of the two extremes and that they consume bottled water in moderation instead. Secondly, results for being from the category of older people did not result in being statistically significant. Nonetheless, even though not significant, the direction of the effects for older people would indicate, that they tend to drink less bottled water compared to the middle-aged group.

Education is analyzed by comparing less educated and highly educated people to those with a middle level of education. The dummy variable describing less educated people does not satisfy the assumption of parallel slopes. The variable for the highly educated group consistently passes a test for parallel slopes assumption across all the regressions. Consequently, three coefficients are estimated for less educated people, and only one for highly educated ones. For less educated people, one unit increase in this variable is associated with higher log odds of drinking bottled water at least several times per week, at a significance level of 5%. Similarly, marginal effects also show that being less educated is associated with being 7% ($p<0.001$) less likely to drink bottled water only a few times a month. On contrary, compared to middle-educated people, those who attained higher levels of education are consistently less likely to drink bottled water. The log odds of this effect are estimated to be 0.22 ($p<0.05$). Marginal effects are in this case significant for all categories. Compared to people with a middle level of education, being highly educated is associated with being 4% ($p<0.05$) more likely to never drink bottled water or to drink it only seldom and being 1.2% ($p<0.01$) more likely to drink it several times per month. The direction of this effect changes between categories two and three. Being highly educated corresponds to being almost 3% ($p<0.05$) less likely to drink bottled water both at least several times per week and several times per day.

Income is analyzed by comparing people with low and high income per household member, to those with middle level of income. The dummy variable for low income, and missing income consistently passes the parallel slopes assumption throughout the modeling. Therefore, one coefficient is estimated for each. The dummy variable for high income does not pass the assumption, hence there are three coefficients estimated. According to the results, the consumption of bottled water by those with low income per household member is not statistically different compared to the reference group (middle income). Nonetheless, the direction of coefficients would indicate a lower consumption in the low-income group. On contrary, those with a high level of income have higher log odds of drinking bottled water several times per day, compared to the reference group. At a 10% significance level, marginal effects suggest that having a high income is associated with being 3.3% more likely to drink bottled water several times per day, and 3.8% less likely to drink it several times per week. Finally, those who refused to provide an answer regarding their income level did not result in having bottled water consumption statistically different from people with a middle level of income.

Employment status is analyzed by comparison of those who work and those who are at home, with unemployed people. In both cases, that parallel slopes assumption is consistently satisfied throughout the modeling. Therefore, only one coefficient is estimated in each case. Firstly, working people have an estimated positive coefficient of 0.23 ($p<0.05$). This implies that they have consistently higher log odds of bottled water intake, compared to those who are unemployed. Similarly, marginal effects indicate that people who work are less likely to belong to categories 1 and 2 by 4.4% ($p<0.05$) and 1.3% ($p<0.01$), respectively. Conversely, they are more likely to belong to categories 3 and 4 by 2.8% ($p<0.05$) and 2.9% ($p<0.05$), respectively. Being at home did not result in an association with statistically different consumption compared to the reference group. Nonetheless, the direction of the coefficients might indicate that those people have slightly lower bottled water intake.

Marital status is analyzed by comparing people in a relationship and those who lost their partner to single people. Being in a relationship does not pass the assumption of parallel slopes. On contrary, this assumption is satisfied for the dummy variable describing people who lost their partner. Consequently, there are three coefficients estimated for the former and only one for the latter variable. In both cases, there does not appear to be a statistically different consumption of bottled water compared to the reference group.

The number of retired members of the household does not pass the assumption of parallel slopes, and three coefficients are estimated. Results indicate that one unit increase in this variable is associated with higher log odds of 0.19 ($p<0.05$) of drinking bottled water several times per day. Similarly, marginal effects show that living in a household with one additional retired person is associated with being less likely to drink bottled water only several times per month by 2.4% ($p<0.05$), and drinking it several times a day more likely by 2.5% ($p<0.05$).

The number of children present in the household satisfies the parallel slopes assumption. Nonetheless, it is not statistically significant throughout the modeling. Thus, it suggests that living with children does not alter the consumption of bottled water.

Environmental values satisfy the parallel slopes assumption, and one parameter is estimated. Direction of the estimated coefficient would indicate that higher environmental values are associated with higher bottled water intake. Nonetheless, results obtained for this variable are not statistically significant. This finding is further discussed in Chapter 6.

The taste does not satisfy the parallel slopes assumption and three coefficients are estimated. Results are highly statistically significant at a 0.1% significance level. One unit increase in this variable, i.e., perceiving the taste of tap water negatively, or perceiving the taste of bottled water positively, is consistently associated with higher log odds of drinking bottled water. Marginal effects uncover that this dummy variable being equal to one is associated with being 21% ($p<0.001$) less likely to never drink bottled water or to only drink it seldom, 10.6% ($p<0.001$) more likely to drink it at least several times per week, and 11.6% ($p<0.001$) more likely to drink it several times a day.

Health reason satisfies the parallel slopes assumption throughout the modeling. Consequently, only one coefficient is estimated. This coefficient is positive; therefore, one unit increase is associated with higher log odds of drinking bottled water. Moreover, this result is highly statistically significant ($p<0.001$). Having health concerns about tap water, or perceiving bottled water as being beneficial for one's health is then associated with being 14.7% ($p<0.001$) less likely to be in category 1, and 7.7% ($p<0.001$) less likely to be in category 2. The direction of the effect changes between categories 2 and 3. Consequently, when health reason equals 1, it is associated with being 7.4% ($p<0.001$) more likely to drink bottled water at least several times per week, and 15.1% ($p<0.001$) more likely to drink it several times per day.

Attitudes towards tap water satisfy the parallel slopes assumption, hence I estimate and consequently interpret one coefficient. The results are statistically significant. One unit increase in attitudes is associated with lower log odds of consuming bottled water at 0,1% significance level. Marginal effects also provide interesting results. With one unit increase in attitudes, people appear to be 0.5% ($p<0.001$) more likely to never drink bottled water or to drink it only seldom, or several times per month. On contrary, they are also 0.3% ($p<0.001$) less likely to drink bottled water both at least several times per week, and several times per day.

Subjective norms do not pass the parallel slopes assumption. Consequently, three coefficients are estimated and interpreted. A highly statistically significant result ($p<0.001$) is found in the comparison of the first three categories, against the fourth. A positive coefficient suggests that with one unit increase in subjective norms, people are more likely to consume bottled water less often than several times per day. Marginal results indicate that one unit increase is associated with being 0.2% ($p<0.1$) more likely to drink bottled water several times per week or once a day, and 0.3% ($p<0.001$) less likely to drink it several times per day.

Perceived behavioral control satisfies the parallel slopes assumption, therefore only one coefficient is estimated and interpreted. One unit increase in this variable then corresponds to higher log odds of drinking bottled water at a 1% significance level. Marginal effects show that one unit increase in perceived difficulty of drinking tap water corresponds to being 0.2% ($p<0.01$) and 0.06% ($p<0.01$) less likely to be in categories 1 and 2, respectively. On contrary, it corresponds to being 0.12% ($p<0.01$) more likely to be in categories 3 and 4. These results indicate that people who perceive to have higher difficulties of accessing tap water at restaurants, cafes, petrol stations or other public places are likely to drink more bottled water.

The habit of drinking tap water does not satisfy the parallel slopes assumption, therefore there are three coefficients estimated for this variable. Habit strength resulted in being a highly statistically significant predictor ($p<0.001$) for all sets of categories of the dependent variable. One unit increase in habit corresponds to lower log odds of drinking bottled water. This effect consistently increases as one compares more lower categories against the higher ones. Marginal effects provide highly significant ($p<0.001$) results. One unit increase in habit is associated with being almost 6% and 4.2% more likely to belong to categories 1 and 2, respectively. On contrary, one unit increase in habit strength corresponds to being almost 4.1% and 6% less likely to drink bottled water at least several times per week, and several times per day, respectively.

5.2 Robustness Check – Multinomial Logit

MNL is used to check for the robustness of the results obtained from GOL. Because the model is unrestricted, there are 63 estimated coefficients. In looking at the marginal effects of GOL, a change in the sign of coefficients is observed mainly between the second and third categories. Consequently, category three is chosen as a base throughout the modeling of the MNL. Results are discussed only with respect to the robustness test. Nonetheless, detailed results of the estimation can be seen in Table B7 in Appendix B.

Results for socio-demographic variables are consistent with the findings from GOL. As such, compared to men, women have higher relative log odds of drinking bottled water several times per day. Less educated people have negative relative log odds of drinking bottled water several times per month compared to those with a middle level of education. The estimated coefficient for younger people is significant only in the fourth category. Nonetheless, this finding is consistent with that of GOL since the coefficient is negative. Bottled water consumption of older people is not statistically different from that of the middle-aged group. Similarly to age, the estimated coefficient for highly educated people is significant only for the fourth category. Nonetheless, the negative sign of the coefficient shows a result that is consistent with that of GOL. People with low income per household member and those who did not disclose a level of their income do not have bottled water consumption statistically different from people with a middle level of income. Similarly to the main model, people with a high level of income also have higher relative log odds of consuming bottled water several times per day.

Results for employment status are also consistent with those of GOL. People who work do not have their coefficient statistically significant when comparing the fourth category with the base. Nonetheless, a finding that they have negative relative log odds of belonging to category 1, is consistent with the former results, as it implies that working people drink more bottled water compared to those who are unemployed. Just like in the case of GOL, people who are at home also were not found to have statistically different bottled water consumption compared to unemployed people.

While results from GOL do not indicate statistical significance of marital status, the opposite is suggested by the MNL. People who are in a relationship have positive relative log odds of drinking bottled water several times per day, compared to single people. On contrary, people who lost their partner have positive relative log odds of belonging to category 1, and 4, i.e., never drinking bottled water, or drinking it only seldom, and drinking bottled water every day, respectively.

The presence of retired people and children in the household also provides a favorable robustness check. One unit increase in the number of retired people is associated with positive relative log odds of being in category 4. The presence of children did not result in being statistically significant.

Similarly to GOL, environmental values do not provide statistically significant results. Consequently, these results seem to be robust, indicating very weak or no relationship between environmental values and bottled water intake.

Taste and health reason also provide evidence for the robustness of the results. Both indicate negative relative log odds of being in lower categories, and highly statistically significant ($p<0.001$) positive relative log odds of drinking bottled water several times per day.

All constructs from the TPB also resulted in being robust. An increase in positive attitudes towards tap water consumption is associated with positive log odds of drinking bottled water less frequently than several times per week. A unit increase in subjective norms corresponds to negative relative log odds of drinking bottled water several times per day. Lastly, an increase in perceived difficulty of drinking tap water is associated with negative relative log odds of belonging to category 1.

Finally, MNL provides evidence for the robustness of results for habits as well. One unit increase in the habit strength is associated with positive relative log odds of belonging to both categories 1 and 2, and negative relative log odds of belonging to category 4.

6 Discussion

This chapter is dedicated to further discussion of the results. For certain predictors, a use of GOL uncovers that the relationships among variables are not always straightforward (e.g., gender, age). Moreover, possible limitations, extensions, and implications of these results are discussed.

Results obtained for the gender align to a certain extent with the stream of literature indicating women as the main bottled water consumers (Levêque & Burns, 2018; Saylor et al., 2011; Wright et al., 2018). Nonetheless, this thesis provides insights, that this is not necessarily always the case. There do not appear to be any differences within categories of lower consumption frequency. The results suggest only that women are more likely to engage in more extreme consumption compared to men.

Data provide insights, that compared to the middle-aged group, younger people tend to have a less extreme intake of bottled water in either direction. In other words, they are both less likely to never drink bottled water and to drink it several times per day. Significant differences are not found in the comparison of the middle and older groups. There is not a consensus in the literature about which age group is a dominant consumer of bottled water. Nonetheless, it should be noted that varying results could be also a consequence of different categorizations of age groups among researchers.

Results on education are also in consensus with the existing literature (e.g., Geerts et al., 2020; Levêque & Burns, 2017), in that they indicate higher consumption among less educated people, and lower among those who are highly educated. Nonetheless, it is important to point out that while this effect is found to be consistent for highly educated people, this is not the case for the low-educated group. Those with lower education are only found to be more likely to drink bottled water at least several times per week. This means that they are not necessarily more likely to also consume it even several times per day, compared to those with a middle level of education.

There appear to be differences between working and unemployed people in their bottled water consumption. According to the results, those who work consistently drink more bottled water compared to their counterparts. The robustness check confirms that those who work are less likely to not engage in bottled water consumption. In a comparison of those who are at home (e.g., on maternity leave) with unemployed people, there are no such results obtained. These results could work as a foundation for further research. For instance, it might be essential to analyze tap water availability at a workplace.

Contrary to expectations, positive environmental values did not result in predicting bottled water consumption. It should be noted that the literature concerning the sustainable behavior of Czech consumers highlights the importance of product quality, rather than environmental concern (e.g., Spilková & Perlín, 2013). Consequently, the results appear to be in line with findings within the Czech context.

Taste and health reasons appear to be two of the predictors with the highest statistical significance. Negative perceptions of tap water taste or positive perceptions of bottled water taste make drinking no bottled water less likely by 21% and drinking it several times a day more likely by almost 11.6%. Similarly, health concerns about tap water or positive perceptions of the healthiness of bottled water make drinking no bottled water almost 15% less likely and drinking it several times per day 15% more likely. These results are in line with the previous findings in the literature (e.g., Geerts et al., 2020; Graydon et al., 2019). Moreover, the magnitude of these results is quite substantial. As such, it provides evidence for the policymakers that ensuring a good taste and healthiness of tap water should be thoroughly considered. This could in turn contribute to a reduction in bottled water consumption, and consequently also in plastic waste from PET bottles.

Constructs from the TPB also provide interesting insights, and their addition to the model greatly improves the pseudo R^2. All attitudes, subjective norms, and perceived difficulty of drinking tap water satisfy the hypotheses. Although significant, the magnitude of these effects is less than 1% in each case.

Habits of drinking tap water appear to have a considerable impact on bottled water consumption. Stronger habits consistently decrease the likelihood of drinking bottled water across the entire range of consumption frequencies. For instance, such habits make zero consumption of bottled water more likely by almost 6%. Some implications stem from this finding. A stream of literature suggests that policies enabling the creation of pro-environmental habits might often be more effective, than those fostering pro-environmental attitudes and awareness (Suárez-Varela & Dinar, 2020). Consequently, results from this thesis might provide insights for the policymakers, in that policies designed to foster habits of drinking tap water could help decrease bottled water consumption.

Several extensions of the thesis could be considered. Firstly, an introduction of additional predictors could be examined. For instance, there is no information in the dataset about whether respondents engage in recycling. Some people are found to believe that recycling plastic bottles lowers the negative impact of drinking bottled water (Saylor et al., 2011). Therefore, an analysis of this relationship within the context of the Czech Republic might provide interesting insights. Moreover, it should be noted that an introduction of a take-away system for PET bottles is being discussed (see e.g., CETA, 2019). As such it could be essential to determine, whether a take-away system is likely to yield a consumer response that has a positive or negative relationship with bottled water consumption. Secondly, a use of the Structural Model could be considered as an alternative model to uncover relationships among variables. This method can be understood as a path analysis using latent variables (e.g., attitudes), where corrections for errors of measurement are made. Moreover, it would be possible to measure both direct and indirect effects.

Finally, although the results provide valuable insights, there exist a few limitations of this thesis. Firstly, econometric analysis uncovers merely associations between variables, not causal relationships. Secondly, the data are cross-sectional, therefore there is no possibility to account for differences over time. For example, interesting results could be obtained in the case of the variable describing health reasons, as Eger et al. (2021) point out that fear for one's health (in relation to COVID-19) can alter consumer shopping behavior. The results are obtained only within the context of the Czech population. Consequently, they are not directly applicable to conclusions about bottled water consumption in other countries. Similarly, constructs from the TPB are related to tap water consumption only and intention to peform a behavior is missing. Therefore, the constructs should be interpreted accordingly.

7 Conclusion

The necessity of response to numerous environmental issues is quite apparent. A lot of these problems stem from the unsustainable behavior of consumers, in terms of their demand. One example of unsustainable consumption is water packed in PET bottles. Environmental problems with this good arise around its entire life cycle. Its production is energy-intensive, consumption is found to lead to higher microplastic intake, and improper disposal to plastic waste pollution. Moreover, such inefficient waste management is also linked to a loss in economic value.

Policymakers respond to environmental issues worldwide. One of the most important initiatives in Europe is the EU Green Deal with its 17 Strategic Development Goals. In the Czech Republic, there is an action plan called „Cirkulární Česko 2040“. As such, the goal is a successful transition toward a circular economy. This plan consists of numerous objectives, including a reduction of single-use plastics (e.g., PET bottles).

In order to decrease the consumption of bottled water, and in turn, reduce the number of single-use plastics, it is essential to understand consumer behavior. Effective policies should then be designed accordingly. Consequently, there exists a stream of research analyzing consumer behavior regarding both tap and bottled water intake. The most studied are organoleptic characteristics, health-related reasons, convenience, price, environmental aspects, and socio-demographic characteristics. To my knowledge, there does not exist a similar study in the context of the Czech Republic. As such, this thesis aims to fill this gap. In addition, this thesis incorporates constructs from the TPB, and habits.

The data are obtained from the questionnaire „TAČR Kohoutková“ created by Zvěřinová, Ščasný, et al. (2022). Measurement of constructs from the TPB required a test for internal consistency. This was performed with the use of Cronbach's alpha, and McDonald's omega. The dependent variable (frequency of bottled water consumption) is ordinal. An ordered logit (restricted model) was primarily considered for the data analysis. Several variables did not satisfy the necessary assumptions and GOL (partial restriction) was used instead. As numerous researchers still opt for MNL (unrestricted model) when parallel slopes assumption is violated, this model was used for the robustness check.

Several relationships between independent variables and the frequency of bottled water consumption were uncovered. A positive relationship with higher bottled water intake was found among women, people who are less educated, have higher income, and are employed, number of retired members of the household, taste, health reasons, and perceived behavioral control. A negative relationship was found with highly educated people, attitudes, subjective norms, and habit strength. On contrary, number of children in the household, marital status, and environmental values did not result in having a relationship with bottled water consumption.

Interesting findings were obtained for age. The results indicate, that while there do not appear to be differences between middle-aged and older groups, it is not the case for younger people. These are not associated with either extreme (zero or very frequent) of consumption. Instead, they are found to consume bottled water in moderation.

There were three predictors that resulted in being quite substantial both in their statistical significance, and magnitude. These include taste, health reasons, and habits. A pleasant taste of bottled water or an unpleasant taste of tap water are both associated with a substantial increase in bottled water intake. Similar results were obtained for health reasons. In this case, high consumption of bottled water is associated with adverse perceptions of tap water healthiness, and positive perceptions about the healthiness of bottled water. Lastly, strong habits of drinking tap water resulted in being a crucial predictor of lower bottled water consumption.

Potential implications for policy-makers stem from this thesis. Firstly, it is important to note, that predictors that appear to have the highest impact are taste, health reasons, and habits. Consequently, there is an indication that a favorable taste of tap water and lower perceived health concerns about this water source, might lead to a decrease in bottled water consumption, as it could be (at least partially) replaced by that of tap water. Therefore, it could be useful to ensure that tap water has these favorable characteristics. Finally, the significance of habits suggests that a design of policies fostering a habit of drinking tap water could also contribute to such pro-environmental behavior.

Some extensions of this thesis could be executed in terms of additional predictors, or alternative forms of modeling. One such independent variable that was not available in the dataset, but that could be considered is recycling (i.e., whether the respondent engages in recycling of PET bottles). This addition might yield interesting results, as it is pointed out in the literature, that those who recycle plastic bottles might attribute a lesser negative environmental impact to bottled water consumption. Finally, the alternative method of modeling that could be further explored is Structural Equation Modeling. Within this approach, it would be possible to observe both direct and indirect relationships among variables.

Finally, although this thesis provides interesting insights, it should be noted that it is still subject to several limitations. The observed data are a cross-section, therefore there is no possibility to account for differences over time. Moreover, the results are country specific. Therefore, while valuable results are obtained in the context of the Czech population, their generalization and application to other cultures (e.g., for policymaking) may not be well founded. It is further important to point out that the results represent associations among variables, not causal relationships. Lastly, the TPB is constructed in relation to tap water consumption and the results are interpreted accordingly.

Bibliography

Aarts, H., Verplanken, B., & Knippenberg, A. (1998). Predicting Behavior From Actions in the Past: Repeated Decision Making or a Matter of Habit? *Journal of Applied Social Psychology*, *28*(15), 1355–1374. https://doi.org/10.1111/j.1559-1816.1998.tb01681.x

Aertsens, J., Verbeke, W., Mondelaers, K., & Van Huylenbroeck, G. (2009). Personal determinants of organic food consumption: A review. *British Food Journal*, *111*(10), 1140–1167. https://doi.org/10.1108/00070700910992961

Ajzen, I. (1985). From Intentions to Actions: A Theory of Planned Behavior. In J. Kuhl & J. Beckmann (Eds.), *Action Control* (pp. 11–39). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-69746-3_2

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211.

Allen, I. E., & Seaman, C. A. (2007). Likert scales and data analyses. *Quality Progress*, *40*(7), 64–65.

Anadu, E. C., & Harding, A. K. (2000). Risk Perception and Bottled Water Use. *Journal - American Water Works Association*, *92*(11), 82–92. https://doi.org/10.1002/j.1551-8833.2000.tb09051.x

Armitage, C. J., & Conner, M. (2001). Efficacy of the Theory of Planned Behaviour: A meta-analytic review. *British Journal of Social Psychology*, *40*(4), 471–499. https://doi.org/10.1348/014466601164939

Arriaga-Medina, J. A., & Piedra-Miranda, A. G. (2021). Water consumption practices in university campuses. The experience of the National Autonomous University of Mexico. *Water Science and Technology*, *84*(5), 1125–1135. https://doi.org/10.2166/wst.2021.306

Ballantine, P., Ozanne, L., & Bayfield, R. (2019). Why Buy Free? Exploring Perceptions of Bottled Water Consumption and Its Environmental Consequences. *Sustainability*, *11*(3), 757. https://doi.org/10.3390/su11030757

Bamberg, S. (2002). EFFECTS OF IMPLEMENTATION INTENTIONS ON THE ACTUAL PERFORMANCE OF NEW ENVIRONMENTALLY FRIENDLY BEHAVIOURS — RESULTS OF TWO FIELD EXPERIMENTS. *Journal of Environmental Psychology*, *22*(4), 399–411. https://doi.org/10.1006/jevp.2002.0278

Bass, D. A., McFadden, B. R., Costanigro, M., & Messer, K. D. (2022). Implicit and Explicit Biases for Recycled Water and Tap Water. *Water Resources Research*, *58*(6). https://doi.org/10.1029/2021WR030712

Becker, G. S. (1992). Habits, Addictions, and Traditions. *Kyklos*, *45*(3), 327–345. https://doi.org/10.1111/j.1467-6435.1992.tb02119.x

Bertram, D. (2007). Likert scales. *Retrieved November*, *2*(10), 1–10.

Borusiak, B., Szymkowiak, A., Pierański, B., & Szalonka, K. (2021). The Impact of Environmental Concern on Intention to Reduce Consumption of Single-Use Bottled Water. *Energies*, *14*(7), 1985. https://doi.org/10.3390/en14071985

Botto, S. (2009). Tap Water vs. Bottled Water in a Footprint Integrated Approach. *Nature Precedings*. https://doi.org/10.1038/npre.2009.3407.1

Brant, R. (1990). Assessing Proportionality in the Proportional Odds Model for Ordinal Logistic Regression. *Biometrics*, *46*(4), 1171. https://doi.org/10.2307/2532457

Buder, F., Feldmann, C., & Hamm, U. (2014). Why regular buyers of organic food still buy many conventional products: Product-specific purchase barriers for organic food consumers. *British Food Journal*, *116*(3), 390–404. https://doi.org/10.1108/BFJ-04-2012-0087

Camerer, C. F., & Loewenstein, G. (2002). *Behavioral Economics: Past, Present, Future*.

Caniëls, M. C. J., Lambrechts, W., Platje, J. (Joost), Motylska-Kuźma, A., & Fortuński, B. (2021). Impressing my friends: The role of social value in green purchasing attitude for youthful consumers. *Journal of Cleaner Production*, *303*, 126993. https://doi.org/10.1016/j.jclepro.2021.126993

Casaló, L. V., & Escario, J.-J. (2018). Heterogeneity in the association between environmental attitudes and pro-environmental behavior: A multilevel regression approach. *Journal of Cleaner Production*, *175*, 155–163. https://doi.org/10.1016/j.jclepro.2017.11.237

Castellani, V., Sanyé-Mengual, E., & Sala, S. (2021). Environmental impacts of household goods in Europe: A process-based life cycle assessment model to assess consumption footprint. *The International Journal of Life Cycle Assessment*, *26*(10), 2040–2055. https://doi.org/10.1007/s11367-021-01987-x

CENIA. (2021a). *Statistická ročenka životního prostředí ČR 2020*. Česká informační agentura životního prostředí. https://www.cenia.cz/publikace/statisticka-rocenka-zivotniho-prostredi-cr/statisticka-rocenka-zivotniho-prostredi-cr-2020/

CENIA. (2021b). *Zpráva o životním prostředí České republiky 2020* (p. 222). Česká informační agentura životního prostředí. https://www.cenia.cz/publikace/zpravy-o-zp/

CENIA. (2022). *Zpráva o životním prostředí České republiky 2021*. Česká informační agentura životního prostředí. https://www.cenia.cz/publikace/zpravy-o-zp/

Český statistický úřad. (2020). *Spotřeba potravin—2019*. https://www.czso.cz/csu/czso/spotreba-potravin-2019

Český statistický úřad. (2021). *Spotřeba potravin—2020*. https://www.czso.cz/csu/czso/spotreba-potravin

Český statistický úřad. (2022). *Vodovody, kanalizace a vodní toky—2021*. https://www.czso.cz/csu/czso/vodovody-kanalizace-a-vodni-toky-2021

CETA. (2019). *Studie dopadů zavedení zálohového systému na nápojové obaly z PET*. Centrum ekonomických a tržních analýz. http://eceta.cz/studie-dopadu-zavedeni-zalohoveho-systemu-na-napojove-obaly-z-pet/

Chekima, B., Syed Khalid Wafa, S. A. W., Igau, O. A., Chekima, S., & Sondoh, S. L. (2016). Examining green consumerism motivational drivers: Does premium price and demographics matter to green purchasing? *Journal of Cleaner Production*, *112*, 3436–3450. https://doi.org/10.1016/j.jclepro.2015.09.102

Choate, B., Davis, B. Y., & Verrecchia, J. (2018). Campus bottled water bans, not always the solution. *International Journal of Sustainability in Higher Education*, *19*(5), 987–997. https://doi.org/10.1108/IJSHE-06-2017-0089

Cohen, A., & Ray, I. (2018). The global risks of increasing reliance on bottled water. *Nature Sustainability*, *1*(7), 327–329. https://doi.org/10.1038/s41893-018-0098-9

Cole, M., Lindeque, P., Halsband, C., & Galloway, T. S. (2011). Microplastics as contaminants in the marine environment: A review. *Marine Pollution Bulletin*, *62*(12), 2588–2597. https://doi.org/10.1016/j.marpolbul.2011.09.025

Conner, M., & Armitage, C. J. (1998). Extending the Theory of Planned Behavior: A Review and Avenues for Further Research. *Journal of Applied Social Psychology*, *28*(15), 1429–1464. https://doi.org/10.1111/j.1559-1816.1998.tb01685.x

Corradi, N., Priftis, K., Jacucci, G., & Gamberini, L. (2013). Oops, I forgot the light on! The cognitive mechanisms supporting the execution of energy saving behaviors. *Journal of Economic Psychology*, *34*, 88–96. https://doi.org/10.1016/j.joep.2012.11.002

Costa, C. S. R., Costa, M. F. da, Maciel, R. G., Aguiar, E. C., & Wanderley, L. O. (2021). Consumer antecedents towards green product purchase intentions. *Journal of Cleaner Production*, *313*, 127964. https://doi.org/10.1016/j.jclepro.2021.127964

Cox, J., Griffith, S., Giorgi, S., & King, G. (2013). Consumer understanding of product lifetimes. *Resources, Conservation and Recycling*, *79*, 21–29. https://doi.org/10.1016/j.resconrec.2013.05.003

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*(3), 297–334.

Delpla, I., Legay, C., Proulx, F., & Rodriguez, M. J. (2020). Perception of tap water quality: Assessment of the factors modifying the links between satisfaction and water consumption behavior. *Science of the Total Environment*, *722*, 137786.

Doria, M. de F. (2010). Factors influencing public perception of drinking water quality. *Water Policy*, *12*(1), 1–19.

Dupont, D., (Vic) Adamowicz, W. L., & Krupnick, A. (2010). Differences in water consumption choices in Canada: The role of socio-demographics, experiences, and perceptions of health risks. *Journal of Water and Health*, *8*(4), 671–686. https://doi.org/10.2166/wh.2010.143

Eger, L., Komárková, L., Egerová, D., & Mičík, M. (2021). The effect of COVID-19 on consumer shopping behaviour: Generational cohort perspective. *Journal of Retailing and Consumer Services*, *61*, 102542. https://doi.org/10.1016/j.jretconser.2021.102542

ElHaffar, G., Durif, F., & Dubé, L. (2020). Towards closing the attitude-intention-behavior gap in green consumption: A narrative review of the literature and an overview of future research directions. *Journal of Cleaner Production*, *275*, 122556. https://doi.org/10.1016/j.jclepro.2020.122556

Espinosa-García, A. C., Díaz-Ávalos, C., González-Villarreal, F. J., Val-Segura, R., Malvaez-Orozco, V., & Mazari-Hiriart, M. (2015). Drinking Water Quality in a Mexico City University Community: Perception and Preferences. *EcoHealth*, *12*(1), 88–97. https://doi.org/10.1007/s10393-014-0978-z

Etale, A., Jobin, M., & Siegrist, M. (2018). Tap versus bottled water consumption: The influence of social norms, affect and image on consumer choice. *Appetite*, *121*, 138–146. https://doi.org/10.1016/j.appet.2017.11.090

European Commission. (2018). *A European Strategy for Plastics in a Circular Economy.* https://www.europarc.org/wp-content/uploads/2018/01/Eu-plastics-strategy-brochure.pdf

European Commission. Statistical Office of the European Union. (2022). *Eurostat regional yearbook: 2022 edition.* Publications Office. https://data.europa.eu/doi/10.2785/915176

Eurostat. (2022). *Packaging waste by waste management operations*. https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do

Ferrer, R. A., & Klein, W. M. (2015). Risk perceptions and health behavior. *Current Opinion in Psychology*, *5*, 85–89. https://doi.org/10.1016/j.copsyc.2015.03.012

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behaviour: An introduction to theory and research* (Vol. 27).

Font-Ribera, L., Cotta, J. C., Gómez-Gutiérrez, A., & Villanueva, C. M. (2017). Trihalomethane concentrations in tap water as determinant of bottled water use in the city of Barcelona. *Journal of Environmental Sciences*, *58*, 77–82. https://doi.org/10.1016/j.jes.2017.04.025

Frederiks, E. R., Stenner, K., & Hobman, E. V. (2015). Household energy use: Applying behavioural economics to understand consumer decision-making and behaviour. *Renewable and Sustainable Energy Reviews*, *41*, 1385–1394. https://doi.org/10.1016/j.rser.2014.09.026

Free, C. M., Jensen, O. P., Mason, S. A., Eriksen, M., Williamson, N. J., & Boldgiv, B. (2014). High-levels of microplastic pollution in a large, remote, mountain lake. *Marine Pollution Bulletin*, *85*(1), 156–163. https://doi.org/10.1016/j.marpolbul.2014.06.001

Gazdecki, M., Goryńska-Goldmann, E., Kiss, M., & Szakály, Z. (2021). Segmentation of Food Consumers Based on Their Sustainable Attitude. *Energies*, *14*(11), 3179. https://doi.org/10.3390/en14113179

Geerts, R., Vandermoere, F., Van Winckel, T., Halet, D., Joos, P., Van Den Steen, K., Van Meenen, E., Blust, R., Borregán-Ochando, E., & Vlaeminck, S. E. (2020). Bottle or tap? Toward an integrated approach to water type consumption. *Water Research*, *173*, 115578. https://doi.org/10.1016/j.watres.2020.115578

Gleick, P. H., & Cooley, H. S. (2009). Energy implications of bottled water. *Environmental Research Letters*, *4*(1), 014009. https://doi.org/10.1088/1748-9326/4/1/014009

Gorelick, M. H. (2011). Perceptions About Water and Increased Use of Bottled Water in Minority Children. *Archives of Pediatrics & Adolescent Medicine*, *165*(10), 928. https://doi.org/10.1001/archpediatrics.2011.83

Graydon, R. C., Gonzalez, P. A., Laureano-Rosario, A. E., & Pradieu, G. R. (2019). Bottled water versus tap water: Risk perceptions and drinking water choices at the University of South Florida. *International Journal of Sustainability in Higher Education*, *20*(4), 654–674. https://doi.org/10.1108/IJSHE-01-2019-0003

Grebitus, C., Roscoe, R. D., Van Loo, E. J., & Kula, I. (2020). Sustainable bottled water: How nudging and Internet Search affect consumers' choices. *Journal of Cleaner Production*, *267*, 121930. https://doi.org/10.1016/j.jclepro.2020.121930

Greene, W. H. (2012). *Econometric analysis* (7. ed., international ed., [veränd. Nachdr.]). Pearson.

Higgs, S. (2015). Social norms and their influence on eating behaviours. *Appetite*, *86*, 38–44. https://doi.org/10.1016/j.appet.2014.10.021

Hoek, A. C., Pearson, D., James, S. W., Lawrence, M. A., & Friel, S. (2017). Shrinking the food-print: A qualitative study into consumer perceptions, experiences and attitudes towards healthy and environmentally friendly food behaviours. *Appetite*, *108*, 117–131. https://doi.org/10.1016/j.appet.2016.09.030

Horowitz, N., Frago, J., & Mu, D. (2018). Life cycle assessment of bottled water: A case study of Green2O products. *Waste Management*, *76*, 734–743. https://doi.org/10.1016/j.wasman.2018.02.043

Hu, Z., Morton, L. W., & Mahler, R. (2011). Bottled Water: United States Consumers and Their Perceptions of Water Quality. *International Journal of Environmental Research and Public Health*, *8*(2), 565–578. https://doi.org/10.3390/ijerph8020565

Illsley, C. L. (2017). *Top Bottled Water Consuming Countries*. https://www.worldatlas.com/articles/top-bottled-water-consuming-countries.html

Jakus, P. M., Shaw, W. D., Nguyen, T. N., & Walker, M. (2009). Risk perceptions of arsenic in tap water and consumption of bottled water: PERCEIVED RISK AND BOTTLED WATER CONSUMPTION. *Water Resources Research*, *45*(5). https://doi.org/10.1029/2008WR007427

Janssen, M. (2018). Determinants of organic food purchases: Evidence from household panel data. *Food Quality and Preference*, *68*, 19–28. https://doi.org/10.1016/j.foodqual.2018.02.002

Javidi, A., & Pierce, G. (2018). U.S. Households' Perception of Drinking Water as Unsafe and its Consequences: Examining Alternative Choices to the Tap. *Water Resources Research*, *54*(9), 6100–6113. https://doi.org/10.1029/2017WR022186

Jebb, A. T., Ng, V., & Tay, L. (2021). A Review of Key Likert Scale Development Advances: 1995–2019. *Frontiers in Psychology*, *12*, 637547. https://doi.org/10.3389/fpsyg.2021.637547

Jones, A. Q., Dewey, C. E., Doré, K., Majowicz, S. E., McEwen, S. A., Waltner-Toews, D., Henson, S. J., & Mathews, E. (2007). A qualitative exploration of the public perception of municipal drinking water. *Water Policy*, *9*(4), 425–438.

Joshi, A., Kale, S., Chandel, S., & Pal, D. (2015). Likert Scale: Explored and Explained. *British Journal of Applied Science & Technology*, *7*(4), 396–403. https://doi.org/10.9734/BJAST/2015/14975

Joshi, Y., Uniyal, D. P., & Sangroya, D. (2021). Investigating consumers' green purchase intention: Examining the role of economic value, emotional value and perceived marketplace influence. *Journal of Cleaner Production*, *328*, 129638. https://doi.org/10.1016/j.jclepro.2021.129638

Juba, O. S., & Tanyanyiwa, V. I. (2018). Perceptions on the use of bottled water in restaurants in Harare's Central Business District (CBD). *Physics and Chemistry of the Earth, Parts A/B/C*, *105*, 239–246. https://doi.org/10.1016/j.pce.2017.12.003

Kalouš, P. (2019). Co pijeme? Otestovali jsme vodu balenou i z kohoutků, v Praze i v Karlových Varech. *Forbes*. https://forbes.cz/co-pijeme-otestovali-jsme-vodu-balenou-i-z-kohoutku-v-praze-i-karlovych-varech/

Kasavan, S., Yusoff, S., Rahmat Fakri, M. F., & Siron, R. (2021). Plastic pollution in water ecosystems: A bibliometric analysis from 2000 to 2020. *Journal of*

Cleaner Production, *313*, 127946. https://doi.org/10.1016/j.jclepro.2021.127946

Katt, F., & Meixner, O. (2020). A systematic review of drivers influencing consumer willingness to pay for organic food. *Trends in Food Science & Technology*, *100*, 374–388. https://doi.org/10.1016/j.tifs.2020.04.029

Kaufmann, H. R., Panni, M. F. A. K., & Orphanidou, Y. (2012). Factors affecting consumers' green purchasing behavior: An integrated conceptual framework. *Amfiteatru Economic Journal*, *14*(31), 50–69.

Klapilova Krbova, P. (2016). Generation Y Attitudes towards Shopping: A Comparison of the Czech Republic and Slovakia. *Journal of Competitiveness*, *8*(1), 38–54. https://doi.org/10.7441/joc.2016.01.03

Klöckner, C. A. (2013). A comprehensive model of the psychology of environmental behaviour—A meta-analysis. *Global Environmental Change*, *23*(5), 1028–1038. https://doi.org/10.1016/j.gloenvcha.2013.05.014

Klöckner, C. A., & Blöbaum, A. (2010). A comprehensive action determination model: Toward a broader understanding of ecological behaviour using the example of travel mode choice. *Journal of Environmental Psychology*, *30*(4), 574–586. https://doi.org/10.1016/j.jenvp.2010.03.001

Klöckner, C. A., & Matthies, E. (2009). Structural Modeling of Car Use on the Way to the University in Different Settings: Interplay of Norms, Habits, Situational Restraints, and Perceived Behavioral Control. *Journal of Applied Social Psychology*, *39*(8), 1807–1834. https://doi.org/10.1111/j.1559-1816.2009.00505.x

Levêque, J. G., & Burns, R. C. (2017). Predicting water filter and bottled water use in Appalachia: A community-scale case study. *Journal of Water and Health*, *15*(3), 451–461. https://doi.org/10.2166/wh.2017.219

Levêque, J. G., & Burns, R. C. (2018). Drinking water in West Virginia (USA): Tap water or bottled water – what is the right choice for college students? *Journal of Water and Health*, *16*(5), 827–838. https://doi.org/10.2166/wh.2018.129

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*.

Linden, S. van der. (2015). Exploring Beliefs About Bottled Water and Intentions to Reduce Consumption: The Dual-Effect of Social Norm Activation and Persuasive Information. *Environment and Behavior*, *47*(5), 526–550. https://doi.org/10.1177/0013916513515239

Liobikienė, G., & Bernatonienė, J. (2017). Why determinants of green purchase cannot be treated equally? The case of green cosmetics: Literature review. *Journal of Cleaner Production*, *162*, 109–120. https://doi.org/10.1016/j.jclepro.2017.05.204

Mason, S. A., Welch, V. G., & Neratko, J. (2018). Synthetic Polymer Contamination in Bottled Water. *Frontiers in Chemistry*, *6*, 407. https://doi.org/10.3389/fchem.2018.00407

McCright, A. M. (2010). The effects of gender on climate change knowledge and concern in the American public. *Population and Environment*, *32*(1), 66–87. https://doi.org/10.1007/s11111-010-0113-1

McDonald, R. P. (1999). *Test theory: A unified treatment*. Psychology Press.

McNeish, D. (2018). Thanks coefficient alpha, we'll take it from here. *Psychological Methods*, *23*(3), 412–433. https://doi.org/10.1037/met0000144

McSpirit, S., & Reid, C. (2011). Residents' Perceptions of Tap Water and Decisions to Purchase Bottled Water: A Survey Analysis from the Appalachian, Big

Sandy Coal Mining Region of West Virginia. *Society & Natural Resources*, *24*(5), 511–520. https://doi.org/10.1080/08941920903401432

Merkel, L., Bicking, C., & Sekhar, D. (2012). Parents' perceptions of water safety and quality. *Journal of Community Health*, *37*(1), 195–201.

Ministerstvo životního prostředí ČR. (2021). *STRATEGICKÝ RÁMEC CIRKULÁRNÍ EKONOMIKY ČESKÉ REPUBLIKY 2040: „MAXIMÁLNĚ CIRKULÁRNÍ ČESKO V ROCE 2040“*. https://www.mzp.cz/C1257458002F0DC7/cz/news_20211213_Vlada-schvalila-Cirkularni_Cesko_2040/$FILE/Cirkul%C3%A1rn%C3%AD%20%C4%8Cesko_2040_web.pdf

Montano, D. E., & Kasprzyk, D. (2015). Theory of reasoned action, theory of planned behavior, and the integrated behavioral model. *Health Behavior: Theory, Research and Practice*, *70*(4), 231.

Moskowitz, H. R., & Krieger, B. (1995). The contribution of sensory liking to overall liking: An analysis of six food categories. *Food Quality and Preference*, *6*(2), 83–90. https://doi.org/10.1016/0950-3293(95)98552-T

Navrátilová, M., Abrhám, J., Beranová, M., & Brož, D. (2019). FAIR TRADE PRODUCTS AND SUSTAINABLE CONSUMER BEHAVIOUR. *Journal of Security and Sustainability Issues*, *8*(4), 825–840. https://doi.org/10.9770/jssi.2019.8.4(23)

Norman, G. (2010). Likert scales, levels of measurement and the "laws" of statistics. *Advances in Health Sciences Education*, *15*(5), 625–632. https://doi.org/10.1007/s10459-010-9222-y

Ouellette, J. A., & Wood, W. (1998). Habit and intention in everyday life: The multiple processes by which past behavior predicts future behavior. *Psychological Bulletin*, *124*(1), 54–74. https://doi.org/10.1037/0033-2909.124.1.54

Parag, Y., & Roberts, J. T. (2009). A Battle Against the Bottles: Building, Claiming, and Regaining Tap-Water Trustworthiness. *Society & Natural Resources*, *22*(7), 625–636. https://doi.org/10.1080/08941920802017248

Patak, M., Branska, L., & Pecinova, Z. (2021). Consumer Intention to Purchase Green Consumer Chemicals. *Sustainability*, *13*(14), 7992. https://doi.org/10.3390/su13147992

Peattie, K. (2010). Green Consumption: Behavior and Norms. *Annual Review of Environment and Resources*, *35*(1), 195–228. https://doi.org/10.1146/annurev-environ-032609-094328

Pham, T. H., Nguyen, T. N., Phan, T. T. H., & Nguyen, N. T. (2019). Evaluating the purchase behaviour of organic food by young consumers in an emerging market economy. *Journal of Strategic Marketing*, *27*(6), 540–556. https://doi.org/10.1080/0965254X.2018.1447984

Pierce, G., & Gonzalez, S. (2017). Mistrust at the tap? Factors contributing to public drinking water (mis)perception across US households. *Water Policy*, *19*(1), 1–12. https://doi.org/10.2166/wp.2016.143

Průša, P., & Sadílek, T. (2019). Green Consumer Behavior: The Case of Czech Consumers of Generation Y. *Social Marketing Quarterly*, *25*(4), 243–255. https://doi.org/10.1177/1524500419881783

Qian, N. (2018). Bottled Water or Tap Water? A Comparative Study of Drinking Water Choices on University Campuses. *Water*, *10*(1), 59. https://doi.org/10.3390/w10010059

Ragusa, A. T., & Crampton, A. (2016). To Buy or not to Buy? Perceptions of Bottled Drinking Water in Australia and New Zealand. *Human Ecology*, *44*(5), 565–576. https://doi.org/10.1007/s10745-016-9845-6

Rana, J., & Paul, J. (2020). Health motive and the purchase of organic food: A meta-analytic review. *International Journal of Consumer Studies*, *44*(2), 162–171. https://doi.org/10.1111/ijcs.12556

Raykov, T. (1997). Estimation of composite reliability for congeneric measures. *Applied Psychological Measurement*, *21*(2), 173–184.

Regnier, A., Gurian, P., & Mena, K. D. (2015). Drinking water intake and source patterns within a US–Mexico border population. *International Journal of Environmental Health Research*, *25*(1), 21–32. https://doi.org/10.1080/09603123.2014.893566

Revelle, W., & Zinbarg, R. E. (2009). Coefficients Alpha, Beta, Omega, and the glb: Comments on Sijtsma. *Psychometrika*, *74*(1), 145–154. https://doi.org/10.1007/s11336-008-9102-z

Rodwan Jr., J. G. (2018). Bottled Water 2017 Staying Strong USUS and International Developments and Statistics. *International Bottled Water Association*.

Rodwan Jr., J. G. (2020). *Bottled Water 2019: SLOWER BUT NOTABLE GROWTH*. U.S. and International Developments and Statistics.

Russell, S., & Fielding, K. (2010). Water demand management research: A psychological perspective: OPINION. *Water Resources Research*, *46*(5). https://doi.org/10.1029/2009WR008408

Sadílek, T. (2020). Examining Attitudes Toward Food Quality Labels: Evidence from Czechia. *Journal of Food Products Marketing*, *26*(3), 197–211. https://doi.org/10.1080/10454446.2020.1745347

Santos, J. M., & Linden, S. van der. (2016). Environmental Reviews and Case Studies: Changing Norms by Changing Behavior: The Princeton Drink Local Program. *Environmental Practice*, *18*(2), 116–122. https://doi.org/10.1017/S1466046616000144

Saylor, A., Prokopy, L. S., & Amberg, S. (2011). What's Wrong with the Tap? Examining Perceptions of Tap Water and Bottled Water at Purdue University. *Environmental Management*, *48*(3), 588–601. https://doi.org/10.1007/s00267-011-9692-6

Ščasný, M., & Smutná, Š. (2021). Estimation of price and income elasticity of residential water demand in the Czech Republic over three decades. *Journal of Consumer Affairs*, *55*(2), 580–608. https://doi.org/10.1111/joca.12358

Scherzer, T., Barker, J. C., Pollick, H., & Weintraub, J. A. (2010). Water consumption beliefs and practices in a rural Latino community: Implications for fluoridation: Rural Latino water consumption. *Journal of Public Health Dentistry*, *70*(4), 337–343. https://doi.org/10.1111/j.1752-7325.2010.00193.x

Severová, L., Svoboda, R., Šrédl, K., Prášilová, M., Soukup, A., Kopecká, L., & Dvořák, M. (2021). Food Safety and Quality in Connection with the Change of Consumer Choice in Czechia (a Case Study). *Sustainability*, *13*(11), 6505. https://doi.org/10.3390/su13116505

Sheeran, P. (2002). Intention—Behavior Relations: A Conceptual and Empirical Review. *European Review of Social Psychology*, *12*(1), 1–36. https://doi.org/10.1080/14792772143000003

Sheeran, P., & Webb, T. L. (2016). The Intention-Behavior Gap: The Intention-Behavior Gap. *Social and Personality Psychology Compass*, *10*(9), 503–518. https://doi.org/10.1111/spc3.12265

Spilková, J., & Perlín, R. (2013). Farmers' markets in Czechia: Risks and possibilities. *Journal of Rural Studies*, *32*, 220–229. https://doi.org/10.1016/j.jrurstud.2013.07.001

StataCorp. (2021). *alpha—Compute interitem correlations (covariances) and Cronbach's alpha*. Stata Press. https://www.stata.com/manuals/mvalpha.pdf

Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behaviour: An integrative review and research agenda. *Journal of Environmental Psychology*, *29*(3), 309–317. https://doi.org/10.1016/j.jenvp.2008.10.004

Suárez-Varela, M., & Dinar, A. (2020). The Role of Curtailment Versus Efficiency on Spillovers Among Pro-Environmental Behaviors: Evidence from Two Towns in Granada, Spain. *Sustainability*, *12*(3), 769. https://doi.org/10.3390/su12030769

Taber, K. S. (2018). The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. *Research in Science Education*, *48*(6), 1273–1296. https://doi.org/10.1007/s11165-016-9602-2

Timilshina, M., Dahal, I., & Thapa, B. (2013). Microbial assessment of bottled drinking water of Kathmandu valley. *International Journal of Infection and Microbiology*, *1*(2), 84–86. https://doi.org/10.3126/ijim.v1i2.7399

Trizano-Hermosilla, I., & Alvarado, J. M. (2016). Best Alternatives to Cronbach's Alpha Reliability in Realistic Conditions: Congeneric and Asymmetrical Measurements. *Frontiers in Psychology*, *7*. https://doi.org/10.3389/fpsyg.2016.00769

UCLA. (2022). *ORDERED LOGISTIC REGRESSION | STATA DATA ANALYSIS EXAMPLES*. UCLA: Statistical Consulting Group. https://stats.oarc.ucla.edu/other/annotatedoutput/

United Nations. (2018). *Our planet is choking on plastic*. UN Environment Programme. https://www.unep.org/news-and-stories/story/our-planet-drowning-plastic-pollution

United Nations. (2021). *Sustainable Development Goals Report 2021.* United Nations.

Vanhonacker, F., & Verbeke, W. (2009). Buying higher welfare poultry products? Profiling Flemish consumers who do and do not. *Poultry Science*, *88*(12), 2702–2711. https://doi.org/10.3382/ps.2009-00259

Verain, M. C. D., Bartels, J., Dagevos, H., Sijtsema, S. J., Onwezen, M. C., & Antonides, G. (2012). Segments of sustainable food consumers: A literature review: Segments of sustainable food consumers. *International Journal of Consumer Studies*, *36*(2), 123–132. https://doi.org/10.1111/j.1470-6431.2011.01082.x

Verain, M. C., Dagevos, H., & Antonides, G. (2015). Sustainable food consumption. Product choice or curtailment? *Appetite*, *91*, 375–384.

Verbeke, W., & Vackier, I. (2005). Individual determinants of fish consumption: Application of the theory of planned behaviour. *Appetite*, *44*(1), 67–82. https://doi.org/10.1016/j.appet.2004.08.006

Vermeir, I., & Verbeke, W. (2006). Sustainable Food Consumption: Exploring the Consumer "Attitude – Behavioral Intention" Gap. *Journal of Agricultural and Environmental Ethics*, *19*(2), 169–194. https://doi.org/10.1007/s10806-005-5485-3

Vermeir, I., & Verbeke, W. (2008). Sustainable food consumption among young adults in Belgium: Theory of planned behaviour and the role of confidence and values. *Ecological Economics*, *64*(3), 542–553. https://doi.org/10.1016/j.ecolecon.2007.03.007

Viscusi, W. K., Huber, J., & Bell, J. (2015). THE PRIVATE RATIONALITY OF BOTTLED WATER DRINKING: THE PRIVATE RATIONALITY OF BOTTLED WATER DRINKING. *Contemporary Economic Policy*, *33*(3), 450–467. https://doi.org/10.1111/coep.12088

Waldman, K. B., Giroux, S., Blekking, J. P., Nix, E., Fobi, D., Farmer, J., & Todd, P. M. (2023). Eating sustainably: Conviction or convenience? *Appetite*, *180*, 106335. https://doi.org/10.1016/j.appet.2022.106335

Wang, B., Li, J., Sun, A., Wang, Y., & Wu, D. (2019). Residents' Green Purchasing Intentions in a Developing-Country Context: Integrating PLS-SEM and MGA Methods. *Sustainability*, *12*(1), 30. https://doi.org/10.3390/su12010030

Wang, P., Liu, Q., & Qi, Y. (2014). Factors influencing sustainable consumption behaviors: A survey of the rural residents in China. *Journal of Cleaner Production*, *63*, 152–165. https://doi.org/10.1016/j.jclepro.2013.05.007

Weisner, M. L., Root, T. L., Harris, M. S., Mitsova, D., & Liu, W. (2020). Tap water perceptions and socioeconomics: Assessing the dissatisfaction of the poor. *Sustainable Production and Consumption*, *21*, 269–278. https://doi.org/10.1016/j.spc.2019.08.008

Westrell, T., Andersson, Y., & Stenström, T. A. (2006). Drinking water consumption patterns in Sweden. *Journal of Water and Health*, *4*(4), 511–522. https://doi.org/10.2166/wh.2006.0034

Whitmarsh, L., & O'Neill, S. (2010). Green identity, green living? The role of pro-environmental self-identity in determining consistency across diverse pro-environmental behaviours. *Journal of Environmental Psychology*, *30*(3), 305–314. https://doi.org/10.1016/j.jenvp.2010.01.003

Wijekoon, R., & Sabri, M. F. (2021). Determinants That Influence Green Product Purchase Intention and Behavior: A Literature Review and Guiding Framework. *Sustainability*, *13*(11), 6219. https://doi.org/10.3390/su13116219

Williams, R. (2006). Generalized Ordered Logit/Partial Proportional Odds Models for Ordinal Dependent Variables. *The Stata Journal: Promoting Communications on Statistics and Stata*, *6*(1), 58–82. https://doi.org/10.1177/1536867X0600600104

Williams, R. (2016). Understanding and interpreting generalized ordered logit models. *The Journal of Mathematical Sociology*, *40*(1), 7–20. https://doi.org/10.1080/0022250X.2015.1112384

Witek, L., & Kuźniar, W. (2020). Green Purchase Behavior: The Effectiveness of Sociodemographic Variables for Explaining Green Purchases in Emerging Market. *Sustainability*, *13*(1), 209. https://doi.org/10.3390/su13010209

World Economic Forum. (2019). *The global risks report 2019*. World Economic Forum.

Wright, C. J., Sargeant, J. M., Edge, V. L., Ford, J. D., Farahbakhsh, K., Shiwak, I., Flowers, C., Gordon, A. C., & Harper, S. L. (2018). How are perceptions associated with water consumption in Canadian Inuit? A cross-sectional survey in Rigolet, Labrador. *Science of The Total Environment*, *618*, 369–378. https://doi.org/10.1016/j.scitotenv.2017.10.255

Zagata, L. (2012). 'We Want Farmers' Markets!' Case Study of Emerging Civic Food Networks in the Czech Republic. *The International Journal of Sociology of Agriculture and Food*, 347-364 Pages. https://doi.org/10.48416/IJSAF.V19I3.209

Zagata, L. (2014). Towards conscientious food consumption: Exploring the values of Czech organic food consumers: Towards conscientious food consumption. *International Journal of Consumer Studies*, *38*(3), 243–250. https://doi.org/10.1111/ijcs.12098

Zhang, X., & Dong, F. (2020). Why Do Consumers Make Green Purchase Decisions? Insights from a Systematic Review. *International Journal of Environmental Research and Public Health*, *17*(18), 6607. https://doi.org/10.3390/ijerph17186607

Zivin, J. G., Neidell, M., & Schlenker, W. (2011). Water Quality Violations and Avoidance Behavior: Evidence from Bottled Water Consumption. *American Economic Review*, *101*(3), 448–453. https://doi.org/10.1257/aer.101.3.448

Zvěřinová, I., Chadimová, K., & Ščasný, M. (2022). *Promoting Switch from Bottled to Tap Water: A Systematic Literature Review of Interventions (working paper)*.

Zvěřinová, I., Ščasný, M., Kryl, M., & Dubová, D. (2022). *Dotazník k projektu TAČR Kohoutková*. Univerzita Karlova, Centrum pro otázky životního prostředí.

Appendix A: Descriptive Statistics

Table A1: Gender (dummy variable)

Category	Description	Freq.	Perc.	Category (new)	Freq. (New)	Perc. (new)
1	woman	1627	49.02%	1	1676	49.14%
2	other	1735	0.12%			
3	man	1735	50.86%	0	1735	50.86%

Notes: Freq. = Frequency, Perc. = Percentage

Table A2: Socio-demographic characteristics (dummy variables)

Category (Yes=1, No=0)	Frequency	Percentage
Age		
younger	910	26.68%
middle	1266	37.12%
older	1235	36.21%
Income		
low	724	21.23%
middle	1474	43.21%
high	710	20.82%
no response	503	14.75%
Education		
low	1413	41.42%
middle	1267	37.14%
high	731	21.43%
Employment		
working	2084	61.10%
at home	291	8.53%
unemployed	1036	30.37%
Marital status		
in relationship	2 147	62.94%
lost Partner	492	14.42%
Single	772	22.63%

Table A3: Taste and health reasons (dummy variables)

Category (Yes=1, No=0)	Frequency	Percentage
Taste		
bad tap water or good bottled water taste	1 090	31.96%
Health reasons		
perceived unhealthiness of tap or healthiness of bottled water	438	12.84%

Table A4.1: Continuous variables

Mean	St. deviation	Median	Mode	Min	Max
Number of household members					
2.68	1.24	2	2	1	7
Income per household memeber					
15 451	10 787	15 500	0	0	77 500
Age					
44.93	15.04	45	66	18	69
Number of retired memebrs of the household					
0.31	0.68	0	0	0	5
Number of children in the household					
0.23	0.63	0	0	0	5

Table A4.2: Continuous variables

	Mean	St. deviation	Median	Mode	Min	Max	α	ω
Attitudes								
	29.24	9.00	29.67	16	4.83	49	0.74	0.84
Subjective norms								
	16.98	11.16	16	16	0	49	0.78	0.84
Perceived behavioral control								
	19.45	11.30	18	16	1	49	0.75	0.75
Environmental values								
	4.36	1.43	4.67	6	0	6	0.88	0.88
Habit of drinking tap water								
	4.97	1.88	5.5	7	1	7	0.80	0.71

Note: α = Cronbach's alpha, ω= McDonald's omega

Appendix B: Estimation Results

Table B1: Model 1 (Generalized Ordered Logit)

Outcome:	**1 vs. 2,3,4**		**1,2 vs. 3,4**		**1,2,3 vs. 4**	
	Estimated coef. (St. error)	**p-value**	**Estimated coef. (St. error)**	**p-value**	**Estimated coef. (St. error)**	**p-value**
Gender						
woman	-0.2210** (0.0768)	0.004	-0.1843** (0.0711)	0.010	0.0605 (0.0857)	0.480
man			*reference group*			
Education						
low	0.0106 (0.0835)	0.899	0.3291*** (0.0777)	0.000	0.2329** (0.0899)	0.010
middle			*reference group*			
high	-0.3312*** (0.0843)	0.000	-0.3312*** (0.0843)	0.000	-0.3312*** (0.0843)	0.000
Age						
18-34	0.3460*** (0.1003)	0.001	0.1154 (0.0880)	0.190	-0.1416 (0.1088)	0.193
35-50			*reference group*			
51-69	-0.4035*** (0.0876)	0.000	-0.1693** (0.0825)	0.040	0.0236 (0.0985)	0.811
Income per household member						
low	-0.0609 (0.0852)	0.475	-0.0609 (0.0852)	0.475	-0.0609 (0.0852)	0.475
middle			*reference group*			
high	0.1150 (0.0838)	0.170	0.1150 (0.0838)	0.170	0.1150 (0.0838)	0.170
missing	-0.0361 (0.0928)	0.697	-0.0361 (0.0928)	0.697	-0.0361 (0.0928)	0.697
constant	1.0545*** (0.0922)	0.000	-0.0354 (0.0850)	0.677	-1.3479*** (0.0987)	0.000

**p<0.1; **p<0.05; ***p<0.01*

Pseudo R^2=0.0163
Likelihood Ratio $\chi^2(16)$= 153.08; Prob>χ^2 = 0.0000
Log-likelihood= -4609.9459
Number of observations: 3411

Table B2: Model 2 (Generalized Ordered Logit)

Outcome:	1 vs. 2,3,4		1,2 vs. 3,4		1,2,3 vs. 4	
	Estimated coef. (St. error)	p-value	Estimated coef. (St. error)	p-value	Estimated coef. (St. error)	p-value
Gender						
woman	-0.1718* (0.0787)	0.029	-0.1704** (0.0732)	0.020	0.0804 (0.0872)	0.357
man			*reference group*			
Education						
low	0.0048 (0.0839)	0.954	0.3404*** (0.0781)	0.000	0.2818*** (0.0905)	0.002
middle			*reference group*			
high	-0.3397*** (0.0849)	0.000	-0.3397*** (0.0849)	0.000	-0.3397*** (0.0849)	0.000
Age						
18-34	0.4642*** (0.1025)	0.000	0.1471 (0.0921)	0.110	-0.1547 (0.1086)	0.154
35-50			*reference group*			
51-69	-0.1176 (0.0880)	0.182	-0.1176 (0.0880)	0.182	-0.1176 (0.0880)	0.182
Income per household member						
low	-0.0251 (0.0865)	0.772	-0.0251 (0.0865)	0.772	-0.0251 (0.0865)	0.772
middle			*reference group*			
high	0.0317 (0.1021)	0.756	-0.0084 (0.0950)	0.929	0.1860* (0.1095)	0.089
missing	-0.0265 (0.0939)	0.778	-0.0265 (0.0939)	0.778	-0.0265 (0.0939)	0.778
Employment status						
working	0.2726*** (0.0871)	0.002	0.2726*** (0.0871)	0.002	0.2726*** (0.0871)	0.002
athome	0.2085 (0.1476)	0.158	0.2085 (0.1476)	0.158	0.2085 (0.1476)	0.158
unemployed			*reference group*			
Marital status						
relationshp	-0.0722 (0.0842)	0.391	-0.0722 (0.0842)	0.391	-0.0722 (0.0842)	0.391
lostpartner	-0.1567 (0.1170)	0.181	-0.1567 (0.1170)	0.181	-0.1567 (0.1170)	0.181
single			*reference group*			

Table B2: Model 2 (Generalized Ordered Logit) cont.

Outcome:	1 vs. 2,3,4		1,2 vs. 3,4		1,2,3 vs. 4	
	Estimated coef. (St. error)	p-value	Estimated coef. (St. error)	p-value	Estimated coef. (St. error)	p-value
retired	-0.0461 (0.0625)	0.461	0.0660 (0.0609)	0.279	0.2227*** (0.0669)	0.001
children	-0.0683 (0.0590)	0.247	-0.0683 (0.0590)	0.247	-0.0683 (0.0590)	0.247
constant	0.8193*** (0.1299)	0.000	-0.1799 (0.1260)	0.153	-1.5247*** (0.1341)	0.000

**p<0.1; **p<0.05; ***p<0.01*

Pseudo R^2=0.0183
Likelihood Ratio $\chi^2(24)$= 171.38; Prob>χ^2 = 0.0000
Log-likelihood= -4600.7952
Number of observations: 3411

Table B3: Model 3 (Generalized Ordered Logit)

Outcome:	1 vs. 2,3,4		1,2 vs. 3,4		1,2,3 vs. 4	
	Estimated coef. (St. error)	p-value	Estimated coef. (St. error)	p-value	Estimated coef. (St. error)	p-value
Gender						
woman	-0.1145 (0.0817)	0.161	-0.1232 (0.0770)	0.109	0.1485 (0.0921)	0.107
man			*reference group*			
Education						
low	-0.0302 (0.0873)	0.729	0.3254*** (0.0820)	0.000	0.2607*** (0.0955)	0.006
middle			*reference group*			
high	-0.2550*** (0.0865)	0.003	-0.2550*** (0.0865)	0.003	-0.2550*** (0.0865)	0.003
Age						
18-34	0.2445** (0.1072)	0.023	-0.0750 (0.0976)	0.442	-0.4240*** (0.1156)	0.000
35-50			*reference group*			
51-69	-0.0162 (0.0899)	0.857	-0.0162 (0.0899)	0.857	-0.0162 (0.0899)	0.857

Table B3: Model 3 (Generalized Ordered Logit) cont.

Outcome:	**1 vs. 2,3,4**		**1,2 vs. 3,4**		**1,2,3 vs. 4**	
	Estimated coef. (St. error)	**p-value**	**Estimated coef. (St. error)**	**p-value**	**Estimated coef. (St. error)**	**p-value**
Income per household member						
low	-0.0654 (0.0884)	0.459	-0.0654 (0.0884)	0.459	-0.0654 (0.0884)	0.459
middle			*reference group*			
high	0.0612 (0.1052)	0.561	0.0193 (0.0991)	0.845	0.2616** (0.1152)	0.023
missing	-0.0173 (0.0965)	0.858	-0.0173 (0.0965)	0.858	-0.0173 (0.0965)	0.858
Employment status						
working	0.2863*** (0.0892)	0.001	0.2863*** (0.0892)	0.001	0.2863*** (0.0892)	0.001
athome	0.1929 (0.1514)	0.202	0.1929 (0.1514)	0.202	0.1929 (0.1514)	0.202
unemployed			*reference group*			
Marital status						
relationshp	0.0426 (0.0866)	0.622	0.0426 (0.0866)	0.622	0.0426 (0.0866)	0.622
lostpartner	-0.0652 (0.1197)	0.586	-0.0652 (0.1197)	0.586	-0.0652 (0.1197)	0.586
single			*reference group*			
retired	-0.0504 (0.0647)	0.436	0.0666 (0.0633)	0.293	0.2441*** (0.0705)	0.001
children	-0.0596 (0.0594)	0.316	-0.0596 (0.0594)	0.316	-0.0596 (0.0594)	0.316
enviro	-0.0788*** (0.0275)	0.004	-0.1183*** (0.0259)	0.000	-0.1550*** (0.0309)	0.000
taste	1.4968*** (0.1062)	0.000	1.1804*** (0.0814)	0.000	1.1900*** (0.0910)	0.000
health	1.3707*** (0.1002)	0.000	1.3707*** (0.1002)	0.000	1.3707*** (0.1002)	0.000
constant	0.5662*** (0.1830)	0.002	-0.3032* (0.1755)	0.084	-1.6787*** (0.1968)	0.000

**p<0.1; **p<0.05; ***p<0.01*

Pseudo R^2=0.0815
Likelihood Ratio $\chi^2(31)$= 763.77; Prob>χ^2 = 0.0000
Log-likelihood= -4304.6038
Number of observations: 3411

Table B4: Model 4 (Generalized Ordered Logit)

Outcome:	1 vs. 2,3,4		1,2 vs. 3,4		1,2,3 vs. 4	
	Estimated coef. (St. error)	p-value	Estimated coef. (St. error)	p-value	Estimated coef. (St. error)	p-value
Gender						
woman	-0.0265 (0.0842)	0.753	0.0062 (0.0794)	0.938	0.2691*** (0.0949)	0.005
man			*reference group*			
Education						
low	-0.0723 (0.0893)	0.418	0.2392*** (0.0839)	0.004	0.1650* (0.0977)	0.091
middle			*reference group*			
high	-0.2324*** (0.0875)	0.008	-0.2324*** (0.0875)	0.008	-0.2324*** (0.0875)	0.008
Age						
18-34	0.2773** (0.1088)	0.011	-0.0328 (0.0994)	0.741	-0.3622*** (0.1176)	0.002
35-50			*reference group*			
51-69	-0.0449 (0.0912)	0.622	-0.0449 (0.0912)	0.622	-0.0449 (0.0912)	0.622
Income per household member						
low	-0.0837 (0.0898)	0.351	-0.0837 (0.0898)	0.351	-0.0837 (0.0898)	0.351
middle			*reference group*			
high	0.0549 (0.1067)	0.607	-0.0237 (0.1009)	0.814	0.2237* (0.1176)	0.057
missing	-0.0962 (0.0977)	0.325	-0.0962 (0.0977)	0.325	-0.0962 (0.0977)	0.325
Employment status						
working	0.3059*** (0.0900)	0.001	0.3059*** (0.0900)	0.001	0.3059*** (0.0900)	0.001
athome	0.1536 (0.1528)	0.315	0.1536 (0.1528)	0.315	0.1536 (0.1528)	0.315
unemployed			*reference group*			
Marital status						
relationshp	0.1188 (0.1036)	0.252	0.0567 (0.0971)	0.559	0.2098* (0.1103)	0.057
lostpartner	-0.0783 (0.1209)	0.517	-0.0783 (0.1209)	0.517	-0.0783 (0.1209)	0.517
single			*reference group*			

Table B4: Model 4 (Generalized Ordered Logit) cont.

Outcome:	1 vs. 2,3,4		1,2 vs. 3,4		1,2,3 vs. 4	
	Estimated coef. (St. error)	p-value	Estimated coef. (St. error)	p-value	Estimated coef. (St. error)	p-value
retired	-0.0531 (0.0665)	0.424	0.0678 (0.0651)	0.297	0.2213*** (0.0725)	0.002
children	-0.0504 (0.0601)	0.401	-0.0504 (0.0601)	0.401	-0.0504 (0.0601)	0.401
enviro	0.0009 (0.0244)	0.971	0.0009 (0.0244)	0.971	0.0009 (0.0244)	0.971
taste	1.4094*** (0.1074)	0.000	1.0779*** (0.0831)	0.000	1.0694*** (0.0933)	0.000
health	1.2011*** (0.1019)	0.000	1.2011*** (0.1019)	0.000	1.2011*** (0.1019)	0.000
attitude	-0.0343*** (0.0049)	0.000	-0.0497*** (0.0047)	0.000	-0.0496*** (0.0057)	0.000
norm	-0.0104*** (0.0038)	0.006	-0.0153*** (0.0037)	0.000	-0.0396*** (0.0049)	0.000
behcontrol	-0.0027 (0.0030)	0.369	-0.0027 (0.0030)	0.369	-0.0027 (0.0030)	0.369
constant	1.4493*** (0.2144)	0.000	0.9637*** (0.2033)	0.000	-0.3538 (0.2258)	0.117

**p<0.1; **p<0.05; ***p<0.01*

Pseudo R^2=0.1072
Likelihood Ratio $\chi^2(38)$= 1004.51; Prob>χ^2 = 0.0000
Log-likelihood= -4184.2308
Number of observations: 3411

Table B5: Model 5 (Generalized Ordered Logit)

Outcome:	1 vs. 2,3,4		1,2 vs. 3,4		1,2,3 vs. 4	
	Estimated coef. (St. error)	p-value	Estimated coef. (St. error)	p-value	Estimated coef. (St. error)	p-value
Gender						
woman	0.0264 (0.0854)	0.757	-0.0032 (0.0815)	0.968	0.2552** (0.0989)	0.010
man			*reference group*			
Education						
low	-0.1480 (0.0914)	0.105	0.1740** (0.0865)	0.044	0.0711 (0.1024)	0.488
middle			*reference group*			
high	-0.2198** (0.0886)	0.013	-0.2198** (0.0886)	0.013	-0.2198** (0.0886)	0.013
Age						
18-34	0.2346** (0.1104)	0.034	-0.0961 (0.1018)	0.345	-0.4109*** (0.1221)	0.001
35-50			*reference group*			
51-69	-0.1052 (0.0927)	0.257	-0.1052 (0.0927)	0.257	-0.1052 (0.0927)	0.257
Income per household member						
low	-0.0772 (0.0908)	0.395	-0.0772 (0.0908)	0.395	-0.0772 (0.0908)	0.395
middle			*reference group*			
high	0.0754 (0.1089)	0.489	-0.0202 (0.1039)	0.846	0.2433** (0.1231)	0.048
missing	-0.1075 (0.0994)	0.280	-0.1075 (0.0994)	0.280	-0.1075 (0.0994)	0.280
Employment status						
working	0.2299** (0.0913)	0.012	0.2299** (0.0913)	0.012	0.2299** (0.0913)	0.012
athome	-0.0500 (0.1560)	0.749	-0.0500 (0.1560)	0.749	-0.0500 (0.1560)	0.749
unemployed			*reference group*			
Marital status						
relationshp	0.0816 (0.1058)	0.441	0.0111 (0.0997)	0.911	0.1462 (0.1151)	0.204
lostpartner	-0.0918 (0.1234)	0.457	-0.0918 (0.1234)	0.457	-0.0918 (0.1234)	0.457
single			*reference group*			

Table B5: Model 5 (Generalized Ordered Logit) cont.

Outcome:	1 vs. 2,3,4		1,2 vs. 3,4		1,2,3 vs. 4	
	Estimated coef. (St. error)	**p-value**	**Estimated coef. (St. error)**	**p-value**	**Estimated coef. (St. error)**	**p-value**
retired	-0.0685 (0.0679)	0.313	0.0423 (0.0668)	0.527	0.1941** (0.0752)	0.010
children	-0.0524 (0.0613)	0.393	-0.0524 (0.0613)	0.393	-0.0524 (0.0613)	0.393
enviro	0.0389 (0.0250)	0.120	0.0389 (0.0250)	0.120	0.0389 (0.0250)	0.120
taste	1.2498*** (0.1094)	0.000	0.9052*** (0.0864)	0.000	0.8118*** (0.0985)	0.000
health	0.9328*** (0.1050)	0.000	0.9328*** (0.1050)	0.000	0.9328*** (0.1050)	0.000
attitude	-0.0244*** (0.0043)	0.000	-0.0244*** (0.0043)	0.000	-0.0244*** (0.0043)	0.000
norm	-0.0041 (0.0039)	0.286	-0.0067* (0.0038)	0.080	-0.0262*** (0.0052)	0.000
behcontrol	0.0096*** (0.0032)	0.002	0.0096*** (0.0032)	0.002	0.0096*** (0.0032)	0.002
habit	-0.3079*** (0.0275)	0.000	-0.4032*** (0.0257)	0.000	-0.4638*** (0.0292)	0.000
constant	2.4499*** (0.2289)	0.000	1.9531*** (0.2165)	0.000	0.7664*** (0.2316)	0.001

**p<0.1; **p<0.05; ***p<0.01*

Pseudo R^2=0.1431
Likelihood Ratio $\chi^2(39)$= 1341.50; Prob>χ^2 = 0.0000
Log-likelihood= -4015.7377
Number of observations: 3411

Table B6: Marginal Effects (Generalized Ordered Logit)

	Outcome 1		Outcome 2		Outcome 3		Outcome 4	
	Marginal effect (SE)	p-value	Marginal effect (SE)	p-value	Marginal effect (SE)	p-value	Marginal effect (SE)	p-value
Gender								
woman	-0.0050 (0.0163)	0.757	0.0058 (0.0164)	0.721	-0.0338* (0.0182)	0.064	0.0330** (0.0129)	0.010
man	*reference group*							
Education								
low	0.0284 (0.0176)	0.107	-0.0718*** (0.0169)	0.000	0.0342* (0.0190)	0.071	0.0092 (0.0133)	0.489
middle	*reference group*							
high	0.0431** (0.0179)	0.016	0.0116*** (0.0042)	0.006	-0.0276** (0.0115)	0.017	-0.0271** (0.0105)	0.010
Age								
18-34	-0.0435** (0.0199)	0.029	0.0675*** (0.0205)	0.001	0.0256 (0.0223)	0.251	-0.0496*** (0.0138)	0.000
35-50	*reference group*							
51-69	0.0202 (0.0179)	0.260	0.0061 (0.0052)	0.245	-0.0128 (0.0114)	0.261	-0.0134 (0.0117)	0.252
Income per household member								
low	0.0149 (0.0177)	0.400	0.0044 (0.0050)	0.377	-0.0095 (0.0113)	0.402	-0.0098 (0.0114)	0.388
middle	*reference group*							
high	-0.0142 (0.0203)	0.484	0.0193 (0.0209)	0.356	-0.0380* (0.0221)	0.086	0.0329* (0.0175)	0.059
missing	0.0209 (0.0196)	0.288	0.0059 (0.0051)	0.247	-0.0133 (0.0126)	0.291	-0.0135 (0.0122)	0.267
Employment status								
working	-0.0443** (0.0178)	0.013	-0.0130*** (0.0050)	0.009	0.0282** (0.0114)	0.013	0.0291** (0.0114)	0.011
athome	0.0096 (0.0303)	0.751	0.0029 (0.0086)	0.740	-0.0061 (0.0194)	0.752	-0.0063 (0.0195)	0.745
unemployed	*reference group*							
Marital status								
relationship	-0.0156 (0.0204)	0.443	0.0129 (0.0175)	0.463	-0.0158 (0.0204)	0.438	0.0186 (0.0144)	0.198
lostpartner	0.0178 (0.0243)	0.464	0.0051 (0.0065)	0.429	-0.0113 (0.0156)	0.466	-0.0116 (0.0152)	0.447
single	*reference group*							

Table B6: Marginal Effects (Generalized Ordered Logit) cont.

	Outcome 1		Outcome 2		Outcome 3		Outcome 4	
	Marginal effect (SE)	p-value	Marginal effect (SE)	p-value	Marginal effect (SE)	p-value	Marginal effect (SE)	p-value
retired	0.0130	0.313	-0.0236**	0.037	-0.0144	0.262	0.0250**	0.010
	(0.0129)		(0.0113)		(0.0129)		(0.0097)	
children	0.0100	0.393	0.0031	0.394	-0.0063	0.394	-0.0067	0.393
	(0.0117)		(0.0036)		(0.0074)		(0.0079)	
enviro	-0.0074	0.120	-0.0023	0.123	0.0047	0.121	0.0050	0.121
	(0.0048)		(0.0015)		(0.0030)		(0.0032)	
taste	-0.2110***	0.000	-0.0109	0.541	0.1060***	0.000	0.1159***	0.000
	(0.0154)		(0.0178)		(0.0196)		(0.0154)	
health	-0.1472***	0.000	-0.0774***	0.000	0.0740***	0.000	0.1506***	0.000
	(0.0135)		(0.0108)		(0.0062)		(0.0207)	
attitude	0.0047***	0.000	0.0014***	0.000	-0.0030***	0.000	-0.0031***	0.000
	(0.0008)		(0.0003)		(0.0005)		(0.0006)	
norm	0.0008	0.286	0.0009	0.268	0.0017*	0.059	-0.0034***	0.000
	(0.0007)		(0.0008)		(0.0009)		(0.0007)	
behcontrol	-0.0018***	0.002	-0.0006***	0.003	0.0012***	0.003	0.0012***	0.002
	(0.0006)		(0.0002)		(0.0004)		(0.0004)	
habit	0.0587***	0.000	0.0420***	0.000	-0.0410***	0.000	-0.0598***	0.000
	(0.0051)		(0.0047)		(0.0056)		(0.0038)	

**p<0.1; **p<0.05; ***p<0.01*

Notes: SE=Standard error

Table B7: Multinomial Logit - Results

	Outcome 1		Outcome 2		Outcome 3	Outcome 4	
	Marginal effect (SE)	p-value	Marginal effect (SE)	p-value	base	Marginal effect (SE)	p-value
Gender							
woman	0.1529 (0.1062)	0.150	0.0124 (0.1122)	0.912		0.3678*** (0.1162)	0.002
man				*reference group*			
Education							
low	-0.1091 (0.1135)	0.336	-0.4234*** (0.1208)	0.000		-0.1400 (0.1215)	0.249
middle				*reference group*			
high	0.0867 (0.1349)	0.520	0.0772 (0.1372)	0.574		-0.4243*** (0.1624)	0.009
Age							
18-34	-0.1873 (0.1375)	0.173	0.1118 (0.1360)	0.411		-0.3302** (0.1454)	0.023
35-50				*reference group*			
51-69	0.1379 (0.1387)	0.320	-0.1513 (0.1501)	0.313		-0.1176 (0.1519)	0.439
Income per household member							
low	0.1218 (0.1349)	0.367	-0.0360 (0.1450)	0.804		-0.0037 (0.1490)	0.980
middle				*reference group*			
high	0.0881 (0.1387)	0.525	0.1668 (0.1447)	0.249		0.4157*** (0.1505)	0.006
missing	0.0226 (0.1505)	0.881	0.2486 (0.1530)	0.104		-0.1035 (0.1676)	0.537
Employment status							
working	-0.3531** (0.1364)	0.010	0.0319 (0.1464)	0.828		0.0649 (0.1474)	0.660
athome	-0.2078 (0.2413)	0.389	0.2369 (0.2453)	0.334		-0.1669 (0.2573)	0.517
unemployed				*reference group*			
Marital status							
relationship	0.1830 (0.1379)	0.184	0.1674 (0.1396)	0.230		0.4222*** (0.1442)	0.003
lostpartner	0.3478* (0.1841)	0.059	0.2246 (0.1990)	0.259		0.3273* (0.1986)	0.099
single				*reference group*			

Table B7: Multinomial Logit - Results cont.

	Outcome 1		Outcome 2		Outcome 3	Outcome 4	
	Marginal effect (SE)	p-value	Marginal effect (SE)	p-value	base	Marginal effect (SE)	p-value
retired	0.1040 (0.0938)	0.268	0.0801 (0.1018)	0.431		0.2629*** (0.1004)	0.009
children	0.1064 (0.0959)	0.267	0.1108 (0.0974)	0.255		-0.0265 (0.1056)	0.801
enviro	-0.0394 (0.0374)	0.292	-0.0137 (0.0403)	0.734		0.0185 (0.0404)	0.648
taste	-1.2900*** (0.1236)	0.000	-0.2061* (0.1122)	0.066		0.4373*** (0.1116)	0.000
health	-0.8900*** (0.1877)	0.000	-0.4263** (0.1762)	0.016		0.6094*** (0.1368)	0.000
attitude	0.0292*** (0.0064)	0.000	0.0264*** (0.0068)	0.000		-0.0093 (0.0071)	0.194
norm	-0.0014 (0.0047)	0.774	-0.0024 (0.0051)	0.638		-0.0280*** (0.0059)	0.000
behcontrol	-0.0131*** (0.0047)	0.005	-0.0059 (0.0050)	0.236		0.0050 (0.0055)	0.368
habit	0.3015*** (0.0352)	0.000	0.2227*** (0.0366)	0.000		-0.3062*** (0.0341)	0.000
constant	-1.5766*** (0.3024)	0.000	-1.9447*** (0.3210)	0.000		0.8297*** (0.3105)	0.008

**p<0.1; **p<0.05; ***p<0.01*

Pseudo R^2*=0.1445*
Likelihood Ratio $\chi^2(63)$*= 1354.24; Prob>*χ^2 *= 0.0000*
Log-likelihood= -4009.3692
Number of observations: 3411

Notes: SE=Standard error