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Consumer perception on proposed food benefits brought by the Farm to Fork strategy; Austria as a case study

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Submitted to Prof. Dr. Sabine Sedlacek

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AFFIDAVIT

I hereby affirm that this Master's Thesis represents my own written work and that I have used no sources and aids other than those indicated. All passages quoted from publications or paraphrased from these sources are properly cited and attributed.

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ABSTRACT

The European Green Deal's Farm to Fork Strategy is at its core. The Farm to Fork Strategy represents a paradigm shift in how Europeans see food sustainability. Establishing a favorable food environment that makes it simpler for customers to adopt healthy, sustainable diets benefits consumers' health and quality of life while lowering society's healthcare expenses. People are becoming more concerned with environmental, health, social, and ethical concerns, and they are seeking more value in food than ever before. Additionally, the strategy is critical to the Commission's pursuit of the United Nations' Sustainable Development Goals. In the previous decade, the organic farming area in Europe has expanded by over 66%, rising from 8.3 million hectares in 2009 to 14.6 million hectares in 2019. Austria is the European Union's leader in organic farming. Around 26% of the nation is organically cultivating their goods, and one in every five farms is organic.

The overall aim of the thesis is to determine consumer perception of proposed food benefits brought by the Farm to Fork strategy in Austria. Additionally, to investigate how significant these benefits are to Austrian consumers and how willing they are to support the transition, i.e., adapt their purchasing habits. To answer the research question, quantitative data is obtained from an online survey that focuses on consumer perception on the proposed Farm to Fork benefits. The obtained data is used to make conclusions on the consumer perception of people residing in Austria on the proposed Farm to Fork benefits.

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LIST OF ABBREVIATIONS

AMA – AgarMarkt Austria

BMI – Body Mass Index

CAP – Common Agricultural Policy

CEAP – Circular Economy Action Plan

COVID-19 - Coronavirus disease

EU – European Union

GDP – Gross domestic product

GHG - Greenhouse gas

GI – Geographical indication of spirit drinks and aromatized wines

GMO – Genetically modified organisms

GVA – Gross value added

PDO – Protected designation of origin

PGI – Protected geographical indication

R&I – Research and innovation

SDG – Sustainable Development Goals

SI – Social Identification Theory

SME - Small and medium-sized enterprises

TPB – Theory of Planned Behavior

TRA – Theory of reasoned action

TSG – Traditional specialty guaranteed

VAT - Value-added tax

1 INTRODUCTION

1.1 Relevance of the topic

Agriculture has a unique role in the European Union's society, ecology, and economy. Agriculture is supported by favorable environmental circumstances that enable farmers to use natural resources, manufacture goods and earn a livelihood. Agriculture, in turn, nourishes farm families and rural communities, while agriculture's food production feeds society as a whole (Sustainable Agriculture in the CAP, n.d.). Giving nature the space it needs is necessary for a healthy and resilient society. The current COVID-19 outbreak underscores the critical need to conserve and restore nature. The pandemic increases awareness of the connections between human health and environmental quality. It demonstrates the need to develop sustainable supply chains and consumption habits that do not surpass the planet's limits (EU Biodiversity Strategy for 2030, 2020). The biodiversity issue is inextricably related to the climate crisis. Climate change hastens the demise of the natural environment via droughts, floods, and wildfires, whereas the depletion and unsustainable utilization of nature are essential contributors to climate change. However, just as crises are interconnected, so are solutions (EU Biodiversity Strategy for 2030, 2020).

The European Green Deal's Farm to Fork Strategy is at its core. It thoroughly covers the difficulties of sustainable food systems and acknowledges the inextricable linkages between healthy individuals, a healthy society, and a healthy world. Additionally, the plan is critical to the Commission's pursuit of the United Nations' Sustainable Development Goals (SDGs). An equitable transition should benefit all residents and operators throughout value chains, in the EU and internationally, especially in the aftermath of the COVID-19 epidemic and the economic slump (Farm To Fork Strategy, n.d.).

A transition to a sustainable food system may have environmental, health, and social advantages and economic ones and can help guarantee that our recovery from the crisis is sustainable (Better Business Better World, 2017; Farm To Fork Strategy, n.d.). Assuring a sustainable livelihood for crucial producers, who continue to fall behind in terms of income, is critical to the success of recovery and transition (CAP Context Indicators, 2018; Farm To Fork Strategy, n.d.).

The COVID-19 pandemic has highlighted the critical nature of a strong and resilient food system that operates in all conditions and can ensure residents have access to an adequate quantity of inexpensive food. Additionally, it has heightened our awareness of the interdependence of our health, ecosystems, supply networks, consumption habits, and planetary limits. It is apparent that we must do much more to maintain the health of both ourselves and the world. Droughts, floods, forest fires, and the rise of new pests serve as a daily reminder that our food system is

threatened and, therefore, must become more sustainable and robust (Farm To Fork Strategy, n.d.).

1.2 Purpose statement

Conventional farming is becoming less and less popular due to its impact on the environment. With the rising demand for organic products, organic farmers are seen as a solution for numerous environmental issues caused by conventional farming.

1.3 Research question

The main research question for the study is as follows:

What is the consumer perception of proposed food benefits brought by the Farm to Fork strategy in Austria?

1.3.1 Aim of the thesis

The overall aim of the thesis is to determine consumer perception of proposed food benefits brought by the Farm to Fork strategy in Austria. Additionally, to investigate how significant these benefits are to Austrian consumers and how willing they are to support the transition, i.e., adapt their purchasing habits.

1.3.2 Researcher's motivation for the topic

From personal experience, starting to learn and understand food since the COVID-19 pandemic, the Researcher has experienced health and well-being benefits of organically produced products. Similarly, many people are discovering this phenomenon and are converting their purchasing habits to organically sourced produce.

1.4 Structure of thesis

This thesis consists of seven primary chapters. These are the introduction, policy context, literature review, methodology, results, discussion of findings, and conclusion. Each of the mentioned chapters are explained thoroughly on their relevance and content to the research.

Starting with the introduction chapter, which briefly outlines the relevance of the topic. Following that is the purpose statement and the research question. Once the research question is outlined, the aim of the thesis and the Researcher's motivation for the topic is discussed. Lastly, the thesis structure is discussed, explaining what each chapter is discussing.

Following the introduction is the policy context chapter, which discusses all the relevant policies related to this research and that are mentioned throughout the thesis. Firstly, it starts with defining the Common Agricultural Policy (CAP), how it started, what it brings, and what can be expected from it in the future. Then, a thorough explanation of the EU Green Deal and the European organic food labels. Following that, the Biodiversity strategy is being discussed on what issues it tackles. Lastly, a comprehensive analysis of the Farm to Fork strategy and components, more precisely: sustainable food production; food security; encouraging sustainable food processing, wholesale, retail, hospitality, and food services practices; endorsing sustainable food consumption, and enabling the transition to healthy and sustainable diets; decreasing food loss and waste; preventing food fraud throughout the food supply chain, and empowering the transition.

The third chapter is the literature review chapter, which outlines the challenges that conventional farming brings and the benefits of organic farming. Afterward, a comprehensive analysis of the current organic farmland state in Austria and the state of current organic products available on the territory of Austria. Subsequently, two consumer theories will be extensively explained on which specific survey questions are based. The two theories are the Theory of planned behavior and the Social identification theory. Additionally, due to this being quantitative research, the hypothesis will be derived at the end of the literature review chapter for the reader to have a complete theoretical understanding of the study. Lastly, a conceptual framework is provided in the hypothesis development segment of the literature review chapter.

Following the literature review is the methodology chapter, which first talks about the research design and instrument. More precisely, it explains how the sampling frame has been selected for the research. Additionally, it explains how the data will be collected and which methods have been chosen by the Researcher. It then discusses how the data is analyzed in the analysis chapter. Lastly, research ethics are outlined and discussed.

The fifth chapter is the results chapter of the research. Throughout this chapter, the Researcher presents the findings from the study. Firstly, the descriptive analyses are performed from the collected data. Following that, the general results are outlined and discussed. Due to this being a quantitative study, the hypotheses are tested. Lastly, the relationships in the conceptual framework are tested and discussed.

Following the results is the discussion chapter. Throughout this chapter, the Researcher compares his findings with previous research and shows how his results are connected with previous findings.

The seventh and final chapter is the conclusion chapter. Throughout this chapter, the Researcher summarizes the study, points out what future research should consist of, and highlights some limitations that the current research faces.

2 POLICY CONTEXT

2.1 The Common Agricultural Policy (CAP)

The CAP integrates social, environmental, and economic considerations to achieve a sustainable agricultural system in the EU (Sustainable Agriculture in the CAP, n.d.) Figure 1 showcases how CAP works with the three interconnected pillars of social sustainability, environmental sustainability, and economic sustainability to provide sustainable agriculture (Sustainable Agriculture in the CAP, n.d.).

FIGURE 1 - CAP FOR A SUSTAINABLE AGRICULTURE (SUSTAINABLE AGRICULTURE IN THE CAP, N.D.).

Having been launched in 1962, the CAP is a partnership between agriculture and society, and a partnership between Europe and its farmers. Additionally, the CAP is a mutual policy for all EU member states. It is controlled and supported at the European level using the EU's budgetary resources (The Common Agricultural Policy at a Glance, n.d.). The main aims of CAP are to:

- Sustain a reliable supply of inexpensive food by supporting farmers and increasing agricultural output;
- Ensure that farmers in the European Union earn a livable wage;
- Contribute to the fight against climate change and sustainable resource management;
- Maintain rural regions and landscapes across the European Union;
- Maintain the rural economy by providing employment opportunities in agriculture, agri-food businesses, and related areas (*The Common Agricultural Policy at a Glance*, n.d.).

The CAP establishes the circumstances necessary for farmers to perform their social duties in three sections, rural community development, food production, and environmentally sustainable farming, showcased in Table 1 *(The Common Agricultural Policy at a Glance, n.d.).*

Rural community development	**Food Production**	**Environmentally sustainable farming**
Numerous vocations associated with farming exist within the region and its priceless natural resources. Farmers need equipment, structures, fuel, fertilizers, and veterinary care for their livestock, referred to as upstream sectors.	Around 10 million farms exist in the EU, and 22 million people work in the industry daily. They deliver a remarkable selection of plentiful, inexpensive, safe, and high-quality goods.	Farmers have a dual challenge by having to produce food while also maintaining the environment and biodiversity. Sensible use of natural resources is critical for food production and overall living quality — now, tomorrow, and future generations.
Other workers are engaged in downstream activities such as food preparation, processing, packaging, food storage, distribution, and wholesale. Agriculture and food production collectively employs almost 40 million people in the EU.	The EU is renowned worldwide for its cuisine and culinary traditions and is a significant producer and net exporter of agri-food goods. Due to its unique agricultural resources, the EU can and ought to play a critical role in ensuring global food security.	
Farmers, upstream and downstream sectors need rapid entry to the up-to-date knowledge on agricultural challenges, farming practices, and market trends to function effectively and stay contemporary and productive. The CAP's resources were dedicated between 2014 and 2020 toward delivering high-speed technology, enhanced internet services, and infrastructure to 18 million rural		

inhabitants — the equivalent of 6.4 percent of the EU's rural population.		

TABLE 1 - BENEFITS BROUGHT BY THE CAP *(THE COMMON AGRICULTURAL POLICY AT A GLANCE, N.D.)*

Regarding the future of the CAP, the arrangement to modify the CAP was officially approved on the 2nd of December 2021. "The new legislation, which is due to begin in 2023, paves the way for a fairer, greener and more performance-based CAP. It will seek to ensure a sustainable future for European farmers, provide more targeted support to smaller farms, and allow greater flexibility for EU countries to adapt measures to local conditions. Agriculture and rural areas are central to the European Green Deal, and the new CAP will be a key tool in reaching the ambitions of the Farm to Fork and biodiversity strategies" (*The New Common Agricultural Policy*, n.d.).

2.2 The European Green Deal

The European Green Deal is a new development strategy intended to transform the EU into a just and affluent society with a modern, resource-efficient, and competitive economy capable of producing no net GHG emissions by 2050 and where economic development is separated from resource usage. Additionally, it strives to safeguard, maintain, and promote the EU's natural capital and protect people's health and wellbeing from environmental risks and hazards. Simultaneously, this shift must be equitable and inclusive. It must prioritize people and devote special attention to the areas, industries, and employees who will encounter the most difficulty in transitioning to such economy. Given the magnitude of the shift, active public engagement and faith in the transition process are critical for policies to operate and be recognized. A new contract is required to bring individuals together in their full variety, with national, regional, and municipal governments, civil society, and businesses collaborating closely with EU institutions and consultative organizations. Europe itself cannot meet the Green Deal's environmental ambitions. Climate change and biodiversity loss are worldwide phenomena that transcend state boundaries. The EU can use its power, experience, and financial resources to persuade its neighbors and associates to unite with them on the road toward sustainability. The EU will continue to lead global efforts and seeks to form coalitions with like-minded nations. Additionally, it recognizes the need to preserve its supply security and competitiveness even

when others are hesitant to act (*The European Green Deal*, 2019). Figure 2 showcases what is expected to be achieved under the European Green Deal (*The European Green Deal*, 2019).

FIGURE 2 - THE EUROPEAN GREEN DEAL (*THE EUROPEAN GREEN DEAL*, 2019)

Regarding the European Green Deal in organic production, the European Green Deal highlights the need to handle the shift to a more sustainable food system, including farmer initiatives to combat climate change, protect the environment, and conserve biodiversity. The agricultural community plays a critical role in achieving these goals. Farmers bear the brunt of climate change and biodiversity loss, while unsustainable agricultural practices continue to be a significant cause of biodiversity loss. Organic farmers are the forerunners of the future's sustainable agriculture by paving the path for environmentally sustainable agriculture and new production practices while promoting circularity and animal wellbeing. The organic label symbolizes farmers' adherence to these demanding production standards, assuring customers that the product was manufactured following precise and severe sustainability guidelines (The European Green Deal, 2019).

The EU organic label establishes a consistent visual identity for organic goods manufactured in the European Union. This simplifies identifying organic goods for customers and assists farmers in marketing them throughout the EU. The organic label may be used only on goods certified organic by an authorized control agency or authority. This indicates they have complied with stringent manufacturing, processing, transportation, and storage requirements. The label may be used

FIGURE 3 - EU ORGANIC LABEL (*THE ORGANIC LOGO*, N.D.)

on goods that require at least 95% organic ingredients and adhere to extra stringent standards for the remaining 5%. Organic and non-organic versions of the same substance are incompatible. Along with the EU organic label, a control body's code number and the location of the source of raw materials used in the good must be indicated (The Organic Logo, n.d.). The label is required for most organic goods and must be presented under strict guidelines. This is to avoid consumer misunderstanding, contribute to the continued faith in organic food, and assist authorities with their inspection regimes. Every pre-packaged EU food item produced and marketed as organic inside the EU must include the label (The Organic Logo, n.d.).

The European Union's quality policy strives to safeguard the names of individual goods to promote their distinctive features, which are connected to their geographical origin and traditional know-how. A product's name may be given a 'geographical indication' (GI) if it has a strong connection to the location of manufacture (Quality Schemes Explained, n.d.). The GI label allows customers to trust and differentiate high-quality items while also assisting manufacturers in marketing their products more effectively. Products considered for GI designation or have already been given are recorded in quality product registries. Additionally, the registers contain data on each product's geographical origin and manufacturing details (Quality Schemes Explained, n.d.). Geographical indicators, recognized as intellectual property, are increasingly crucial in trade discussions between the European Union and other nations. Other EU quality programs place a premium on traditional manufacturing processes or goods produced in challenging natural environments like mountains or islands (Quality Schemes Explained, n.d.).

Thus far there are three geographical indications for goods:

1. **Protected designation of origin (PDO)**

FIGURE 4 – PROTECTED DESIGNATION OF ORIGIN LABEL (*QUALITY SCHEMES EXPLAINED*,

PDO-registered product names that have the closest ties to the site of production. As a geographical indication, PDO covers products such as food, agricultural products, and wines. Regarding specification, each manufacturing, processing, and preparation stage must occur in a designated territory. The label is mandatory for food and agricultural products but optional for wines (Quality Schemes Explained, n.d.).

2. **Protected geographical indication (PGI)**

FIGURE 5 – PROTECTED GEOGRAPHICAL INDICATION LABEL (*QUALITY SCHEMES EXPLAINED*, N.D.)

PGI-registered product emphasizes the connection between a particular geographic place and the product's name whenever a product's quality, reputation, or other feature is due mainly to its geographical origin. Similar to PDO, PGI covers products such as food, agricultural products, and wines as a geographical indication. Regarding specification, at least one step of manufacturing, processing, or preparation occurs in the area for the majority of items. Again similarly to PDO, the PGI label is mandatory to be

placed on food and agricultural products but optional for wines (Quality Schemes Explained, n.d.).

FIGURE 6 - GEOGRAPHICAL INDICATION OF SPIRIT DRINKS AND AROMATIZED WINES LABEL (*QUALITY SCHEMES EXPLAINED*, N.D.)

3. **Geographical indication of spirit drinks and aromatized wines (GI)**

GI-registered goods protect the name of a spirit beverage or aromatized wine that originates in a nation, area, or locale where the product's unique quality, reputation, or other attribute is primarily related to its geographical origin. Unlike PDO and PGI, GI covers only spirit beverages and aromatized wines as products. Regarding specification, for most goods, at least one step of distillation or preparation occurs in the area. However, raw materials do not have to originate in the area. Regarding the label use, it is optional for all products (Quality Schemes Explained, n.d.).

Even more crucially, organic farming incorporates a more significant amount of nature into our fields and strengthens farmers' resilience to economic changes and those brought about by an increasingly unpredictable natural and climatic system (An Action Plan for the Development of Organic Production, 2021).

Temporarily, the COVID-19 epidemic has posed an extraordinary encounter to the EU. It profoundly affects the economy, people's health, and food systems. The EU's reaction consists of a recovery strategy backed up by the 'Next Generation EU' instrument and a new multi-year budgetary structure. Funds from the 'Next Generation EU' program may assist investments in the organic sector that satisfy specific criteria and goals. Europe's reclamation from the COVID-19 crisis offers an early chance to enforce the Green Deal by laying the groundwork for sustainable production and consumption patterns, notably in agriculture and aquaculture. Organic farming is critical to achieving Europe's recovery, which should be environmentally and technologically sustainable, by increasing rural incomes (An Action Plan for the Development of Organic Production, 2021).

2.3 Biodiversity Strategy

Nature conservation and restoration will also be crucial for Europe's economic recovery after the COVID-19 crisis. It is vital to evade reverting to old destructive behaviors when reviving the economy. The European Green Deal aims to serve as a compass for our recovery, safeguarding that the economy benefits people and society while also returning more to nature than it takes. Genes, species, and ecosystem services are critical inputs for industry and businesses, particularly in the pharmaceutical industry (EU Biodiversity Strategy for 2030, 2020). A study conducted by the World Economic Forum in collaboration with PwC demonstrates that $44 trillion in economic value creation, or more than half of the world's total GDP, is somewhat or heavily reliant

on nature and its services and hence vulnerable to nature loss. Together, the three primary industries that rely heavily on nature produce about $8 trillion in gross value added (GVA): construction ($4 trillion), agriculture ($2.5 trillion), and food and beverages ($1.4 trillion) (Nature Risk Rising, 2020). Natural capital investment, which includes the restoration of carbon-rich ecosystems and climate-friendly agriculture, is renowned as one of the five most essential fiscal recovery strategies since it generates significant economic multipliers and has a beneficial influence on the climate (EU Biodiversity Strategy for 2030, 2020; Hepburn et al., 2020).

It will be critical for the EU to capitalize on this opportunity to guarantee the recovery's success, sustainability, and durability (EU Biodiversity Strategy for 2030, 2020). Biodiversity is similarly critical for ensuring the EU's and the world's food security. Biodiversity depletion puts our food systems in danger, jeopardizing our food security and nutrition (EU Biodiversity Strategy for 2030, 2020; The Global Risk Report 2020, 2020).

The EU Biodiversity Strategy for 2030 outlines a wide-ranging package of obligations and activities aimed at reviving Europe's biodiversity by 2030 for the betterment of citizens, the earth, the climate, and the economy, by the 2030 Agenda for Sustainable Development and the Paris Climate Agreement's goals (EU Biodiversity Strategy for 2030, 2020). The strategy intends to address the five primary causes of biodiversity loss, provide an improved governance structure, and close any policy holes while combining current initiatives and guaranteeing the complete application of the current EU law. Nature protection and restoration will need more than the legislation itself. Additionally, it requires action from individuals, companies, social partners, the research and knowledge sector, and strong collaboration at the local, regional, national, and European levels. As a result, the Strategy establishes mechanisms to catalyze such initiatives and promote revolutionary change (EU Biodiversity Strategy for 2030, 2020). The EU Biodiversity Strategy is a significant component of both the EU's Green Deal and Economic Recovery Package. Together, they signal a renewed commitment to building our economy's strength and competitiveness on its sustainability and to pave the path for a resource-efficient, climate-neutral, and socially equitable future (EU Biodiversity Strategy for 2030, 2020). To summarise, the one vision for the EU Biodiversity Strategy is that by 2050, all of the earth's ecosystems will be restored, resilient, and sufficiently protected. Additionally, the one goal is to put Europe's biodiversity on the road to recovery by 2030 to benefit individuals, the earth, the climate, and our economy (EU Biodiversity Strategy for 2030, 2020).

2.4 Farm to Fork Strategy

The Farm to Fork Strategy represents a paradigm shift in how Europeans see food sustainability. It is a chance to enhance people's lives, health, and the environment. Establishing a favorable food environment that makes it simpler for customers to adopt healthy, sustainable diets benefits consumers' health and quality of life while lowering society's healthcare expenses. People are becoming more concerned with environmental, health, social, and ethical concerns,

and they are seeking more value in food than ever before. Even as civilizations grow more urbanized, people need a sense of connection to their food. They desire food that is fresh, little processed, and obtained responsibly. And during the current epidemic, requests for shortened supply chains have strengthened. Consumers should be empowered to make sustainable food choices, and all players throughout the food chain should see this as a duty and an opportunity (Farm To Fork Strategy, n.d.)

European food culture has already established a worldwide standard for safe, abundant, healthy, and high-quality food. This is the outcome of decades of EU policies to safeguard human, animal, and plant health and farmer, fisher, and aquaculture producer initiatives. Now, European food should also become a benchmark for sustainability worldwide. This plan intends to reward farmers, fishermen, and other food chain operators who have already shifted to sustainable methods, facilitate the change for others and expand their companies. Agriculture in the European Union is the only major system on the planet that has cut greenhouse gas (GHG) emissions (by 20 percent since 1990) (Farm To Fork Strategy, n.d.) However, even inside the EU, this route has not been linear or uniform among the Member States. Additionally, food production, processing, retailing, packing, and transportation contribute significantly to air, soil, water pollution, and greenhouse gas emissions and dramatically affect biodiversity. Although the EU's transition to sustainable food systems has begun in several regions, food systems continue to be a major contributor to climate change and the destruction of the environment. There is a pressing urge to minimize reliance on pesticides and antimicrobials, eliminate excessive fertilization, boost organic farming, enhance animal welfare, and counteract biodiversity loss (Farm To Fork Strategy, n.d.).

Transitioning to sustainable food systems represents significant economic potential as well. Citizen expectations are changing, resulting in considerable changes in the food industry. This is a chance for farmers, fishermen, aquaculture suppliers, food processors, and foodservice providers. This transformation will enable them to brand sustainability and secure the EU food chain's future before their rivals outside the EU do. The shift to sustainability offers an opportunity for all participants in the EU food chain to be 'first movers '(Farm To Fork Strategy, n.d.).

The changeover cannot occur without a change in people's diets. Yet, 33 million people in the EU cannot afford a nutritious meal every other day, and food aid is necessary for a segment of the population in the several Member States (Farm To Fork Strategy, n.d.). Food insecurity and accessibility are likely to worsen during an economic crisis, making it critical to take steps to alter consumption habits and reduce food waste. While approximately 20% of food produced is wasted (Farm To Fork Strategy, n.d.; Stenmarck et al., 2016), obesity is also rising. Approximately 50% of the adult population is now overweight, resulting in a high incidence of diet-related disorders (including several forms of cancer) and associated healthcare expenses (Farm To Fork Strategy, n.d.; Obesity Rate by Body Mass Index (BMI), n.d.). Figure 7 showcases the obesity rate

by country in the European Union. For Austria, 52% of the adult population is considered overweight according to their Body Mass Index (Obesity Rate by Body Mass Index (BMI), n.d.). Additionally, it is apparent that we cannot effect change until we include the rest of the globe. The EU is the world's biggest importer and exporter of agri-food goods and the world's biggest fisheries market. Commodity production may have detrimental environmental and socio-economic consequences in the nations where it is produced. Thus, efforts to strengthen sustainability criteria in the EU food system should be supplemented with policies that contribute to global standard-setting to prevent the externalization and export of unsustainable operations. A sustainable food system will be critical for achieving the Green Deal's climate and environmental goals while increasing primary farmers' incomes and strengthening the EU's competitiveness. This approach contributes to the transformation by emphasizing new possibilities for residents and food businesses (Farm To Fork Strategy, n.d.). Figure 8 showcases the four main components of the Farm to Fork Strategy (Farm to Fork Strategy, n.d.). Additionally, each of the components will be thoroughly analyzed in the coming part of the Literature Review.

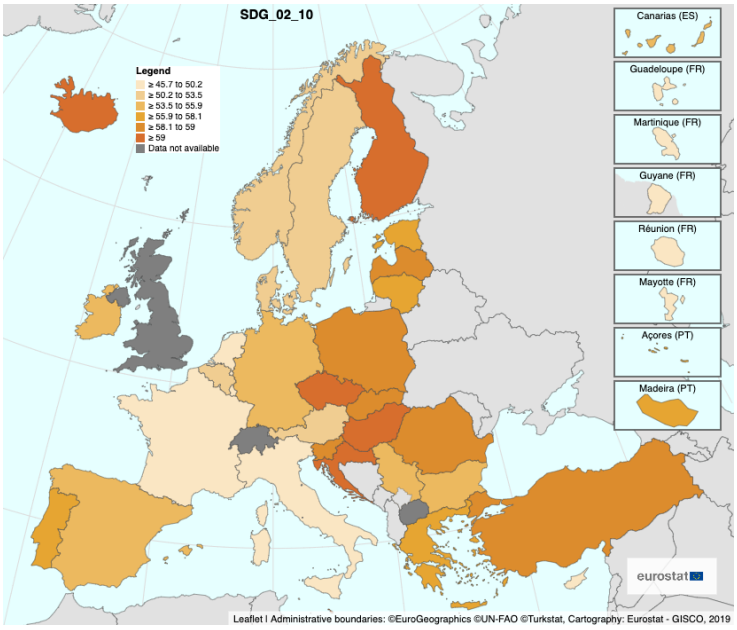

FIGURE 7 – OBESITY RATES IN EUROPE (*OBESITY RATE BY BODY MASS INDEX (BMI)*, N.D.)

FIGURE 8 - FARM TO FORK MAIN COMPONENTS (*FARM TO FORK STRATEGY*, N.D.)

2.4.1 Sustainable Food Production

All parties in the food chain must contribute to the chain's sustainability. Farmers, fishers, and aquaculture producers must accelerate the transformation of their methods of production and make the best use of natural, technological, digital, and space-based solutions to achieve better climate and environmental outcomes, increase climate resilience and reduce and optimize input use (e.g., pesticides, fertilizers). These solutions need both human and financial resources and offer better returns via additional value creation and cost reduction (Farm To Fork Strategy, n.d.).

Farmers should seize possibilities to minimize livestock methane emissions by establishing renewable energy sources and investing in anaerobic digesters to generate biogas from agricultural waste and residues, like manure. Additionally, farms have the potential to generate biogas from various waste and residue sources, such as the food and beverage sector, sewage, wastewater, and municipal trash (Farm To Fork Strategy, n.d.).

Chemical pesticide usage in agriculture leads to soil, water, and air pollution and biodiversity loss and has the potential to damage non-target plants, insects, birds, mammals, and amphibians. The Commission has previously produced a Harmonised Risk Indicator to track progress toward pesticide risk reduction, indicating a 20% reduction in pesticide-related risk over the last five years. By 2030, the Commission will take further steps to significantly decrease the total usage and danger of chemical pesticides by 50 percent, including the use of more dangerous pesticides by 50%. The Commission will undertake numerous initiatives to pave the way for alternatives and protect farmers' earnings (Farm To Fork Strategy, n.d.).

Agricultural techniques that minimize pesticide usage under the CAP will be critical, and Strategic Plans should represent this shift and facilitate access to assistance. Additionally, the Commission will streamline the marketing of pesticides containing biologically active ingredients and strengthen pesticide risk assessment (Farm To Fork Strategy, n.d.).

Excess nutrients (particularly nitrogen and phosphorus) in the environment, caused by excessive usage and the fact that plants properly absorb not all fertilizers active in agriculture, is another significant source of air, soil, and water pollution, as well as climate change effects (Farm To Fork Strategy, n.d.; Juvyns et al., 2019). It has had a devastating effect on the biodiversity of rivers, lakes, wetlands, and seas. The Commission will take action to limit nutrient depletion by at least 50% while maintaining soil fertility, and this will result in a minimum 20% reduction in fertilizer consumption by 2030. This will be accomplished by fully implementing and enforcing applicable environmental and climate legislation, identifying the necessary nutrient load reductions with the Member States, implementing balanced fertilization and sustainable nutrient management, and managing nitrogen and phosphorus more effectively throughout their lifecycles (Farm To Fork Strategy, n.d.).

The Commission aims to collaborate with the Member States to produce a proper nutrient plan of action to address nutrient contamination at its source and enhance the livestock sector's sustainability. Additionally, the Commission will collaborate with the Member States to expand precision fertilization methods and sustainable farming techniques, particularly in high-growth sectors of intensive animal farming and organic waste recycling for renewable fertilizers.

Agriculture accounts for 10.3 percent of the EU's GHG emissions, with approximately 70% coming from the animal sector (Farm To Fork Strategy, n.d.; Juvyns et al., 2019). They are composed of non-CO2 GHGs (methane and nitrous oxide). Additionally, 68 percent of total agricultural acreage is dedicated to livestock production (Farm To Fork Strategy, n.d.). To assist in reducing animal production's environmental and climatic effects, avoiding carbon leakage via imports, and advancing the shift to more sustainable animal agriculture, the Commission will enable the introduction of sustainable and innovative food supplements (Farm To Fork Strategy, n.d.).

Additionally, the Commission reviews the EU's agricultural promotion program to strengthen its support for sustainable production and consumption while remaining consistent with shifting diets. In terms of meat, that assessment should concentrate on how the EU can best utilize its promotion program to promote the most sustainable and carbon-efficient animal production systems. Additionally, it will rigorously evaluate any request for paired assistance in Strategic Plans from the standpoint of overall sustainability (Farm To Fork Strategy, n.d.).

Improved animal wellbeing benefits animal health and food quality, decreases the need for treatment and contributes to biodiversity conservation. The Commission will modify animal welfare laws, particularly those governing animal transportation and slaughter, to bring them into line with the most recent scientific findings, widen its reach, make them simpler to enforce, and eventually achieve a better standard of animal care. This approach will be aided by the Strategic Plans and the new EU Strategic Guidelines on Aquaculture. Additionally, the Commission will investigate possibilities for animal welfare labeling to improve value transmission across the food chain (Farm To Fork Strategy, n.d.).

Climate change poses new dangers to the health of plants, and the sustainability problem necessitates improved protection of plants against developing pests and diseases and innovation. The Commission will implement regulations to strengthen monitoring and surveillance over plant imports and on Union territory. Innovative approaches, such as biotechnology and the creation of bio-based goods, may contribute to increased sustainability, as long as they are safe for customers and the environment while still benefiting society. Additionally, they help hasten the process of lowering reliance on pesticides. In response to Member States' requests, the Commission is conducting research to assess the potential for new genomic approaches to enhance food supply chain sustainability (Farm To Fork Strategy, n.d.).

Seed security and variety are also critical components of sustainable food systems, and farmers must have access to a diverse selection of high-quality seeds for climate-adaptive plant kinds. The Commission will take steps to ease seed variety registration, especially for organic farming, and improve access to markets for traditional and regionally adapted varieties (Farm To Fork Strategy, n.d.).

The Commission intends to pay special attention to the Green Deal goals and those derived from this plan and the 2030 Biodiversity Strategy. It will invite the Member States to establish clear national values for those objectives, considering their unique circumstances and above guidelines. Member States will outline essential steps in their Strategic Plans based on these ideals. Parallel to agricultural improvements, the transition to sustainable fish and seafood production must be hastened (Farm To Fork Strategy, n.d.).

Lastly, to assist primary producers throughout the shift, the Commission intends to clarify the competition laws regarding collective activities that enhance supply chain sustainability. Additionally, it will help farmers strengthen their supply chain positions and capture a fair share of the added value associated with sustainable production by promoting opportunities for cooperation within common market organizations for agricultural goods (Farm To Fork Strategy, n.d.). Additionally, it will collaborate with co-legislators to tighten agricultural regulations that protect farmers' (e.g., producers of goods with geographical indications), cooperatives, and producer organizations along the food supply chain (Farm To Fork Strategy, n.d.).

2.4.2 Food security

A sustainable food system needs to guarantee that people have access to an adequate and diverse supply of safe, nutritious, inexpensive, and sustainable food at all times, particularly during times of crisis. Events that threaten the sustainability of food systems may not always originate in the food supply chain but might be sparked by political, economic, environmental, or public health problems. While the present COVID-19 epidemic has no bearing on food safety in the EU, a crisis of this magnitude may jeopardize food security and lives. Climate change and biodiversity loss pose immediate and irreversible concerns to food security and wellbeing. The Commission will continue to carefully monitor food security and the competitiveness of farmers and food producers in the framework of this plan (Farm To Fork Strategy, n.d.).

The complexity and breadth of the food value chain impact crises differently. While there has been an adequate supply of food overall, this pandemic has created several obstacles, including logistical interruptions in supply chains, labor shortages, the loss of specific markets, and changes in consumer behavior, all of which have impacted the operation of food systems (Farm To Fork Strategy, n.d.).

Increasing food producers' sustainability will eventually boost their resilience, and this plan intends to provide a new framework for that, supplemented by the Biodiversity Strategy's

initiatives. The COVID-19 epidemic has also highlighted the crucial nature of key employees, such as agricultural workers. This is why it will be critical to reduce the socio-economic effects on the food chain and guarantee that the European Pillar of Social Rights' core principles is upheld, particularly regarding precarious, seasonal, and undeclared employees (Farm To Fork Strategy, n.d.).

Social protection, working and living circumstances, and health and safety protection will play a significant part in developing just, robust, and sustainable food systems. The Commission will strengthen its coordination of a coordinated European response to food system crises to safeguard food security and safety, enhance public health, and reduce the EU's socio-economic effect. Based on the lessons learned, the Commission will analyze the food system's resilience and establish a contingency plan for assuring food supply and security in times of crisis. The agricultural crisis reserves will be restructured so that their full potential may be used immediately in the event of an agricultural market catastrophe. Along with risk assessment and mitigation measures that will be implemented during a crisis, the plan would establish a food crisis response system managed by the Commission and include the Member States. It will consist of various sectors (agricultural, fisheries, food safety, human resources, health, and transportation) depending on the severity of the crisis (Farm To Fork Strategy, n.d.).

2.4.3 Encouraging sustainable food processing, wholesale, retail, hospitality, and food services practices

Food processors, food service providers, and retailers impact the market and influence customers' dietary choices via the foods they produce, supplier selection, manufacturing processes and packaging, transportation, merchandising, and marketing activities. As the world's largest importer and exporter of food, the EU food and beverage sector also impacts global trade's environmental and social imprint. By strengthening the sustainability of our food systems can help businesses and products continue to build their reputations, generate shareholder value and better working conditions, attract employees and investors, and provide businesses with a competitive advantage, productivity gains, and cost savings (Farm To Fork Strategy, n.d.).

The food industry and retail sector should lead by boosting access to and accessibility of healthy, sustainable food alternatives to lower the food system's total environmental impact. The Commission will encourage this by developing an EU code of conduct for responsible business and marketing practices and a monitoring system. The Code will be created in collaboration with all interested parties. The Commission intends to seek commitments from food companies and organizations to take concrete actions on health and sustainability, with a particular emphasis on:

- „reformulating food products in line with guidelines for healthy, sustainable diets“ (Farm To Fork Strategy, n.d.: 13)
- „reducing their environmental footprint and energy consumption by becoming more energy efficient“ (Farm To Fork Strategy, n.d.: 13)
- „adapting marketing and advertising strategies taking into account the needs of the most vulnerable“ (Farm To Fork Strategy, n.d.: 13)
- and “ensuring that food price campaigns do not undermine citizens’ perception of the value of food“ (Farm To Fork Strategy, n.d.; 13).

For instance, marketing initiatives promoting very cheap meat must be avoided. The Commission will examine these promises and, if progress is inadequate, will consider legislative actions. Additionally, the Commission is working on an effort to strengthen corporate governance, which will include a mandate for the food sector to incorporate sustainability into its business objectives. The Commission will also look for options to simplify the transition to better diets and drive product reformulation, notably via establishing nutritional profiles that prohibit the marketing of foods rich in fat, sugar, and salt (through nutrition or health claims). The Commission will take action to scale up and promote sustainable and socially responsible manufacturing practices as well as circular business models in food processing and commerce, with a particular emphasis on SMEs, in alignment with the new CEAP's (Circular Economy Action Plan) aims and ambitions (Farm To Fork Strategy, n.d.).

The development of a circular and sustainable EU bioeconomy creates commercial possibilities, for example, in the area of food waste use. Food packaging is critical to the long-term viability of food systems. The Commission intends to review the legislation governing food contact materials in an effort to better food safety and public health (specifically, by lessening the usage of hazardous chemicals), promote the usage of inventive and sustainable packaging solutions made of environmentally friendly, ecological, and recyclable materials, and make a contribution to food waste reduction. Additionally, as part of the CEAP's sustainable goods effort, it will work on a jurisdictive proposal promoting reusability in food services to replace food packaging and cutlery used only once with reusable items (Farm To Fork Strategy, n.d.).

Ultimately, the Commission will reevaluate marketing principles to ensure the acceptance and stock of sustainable agricultural, fisheries, and aquaculture products, as well as to strengthen the position of sustainability principles, while bearing in mind the potential influence these principles have on food loss and waste (Farm To Fork Strategy, n.d.).

2.4.4 Endorsing sustainable food consumption and enabling the transition to healthy and sustainable diets

Current food consumption trends are unsustainable in terms of health and the environment. While average caloric, red meat, sugar, salt, and fat intakes in the EU continue to exceed guidelines, consumption of whole grains, fruits and vegetables, legumes, and nuts remains inadequate (Farm To Fork Strategy, n.d.; Willett et al., 2019). By 2030, it is necessary to halt the growth in overweight and obesity rates throughout the EU. By shifting to a more plant-based diet that includes less red and processed meat and more fruits and vegetables, we can minimize not just our chance of developing life-threatening illnesses but also the food system's environmental effect (Farm To Fork Strategy, n.d.; Sustainable Healthy Diets Guiding Principles, 2019). The EU's goal for 'fighting cancer' involves health-promoting nutrition as part of its cancer prevention efforts. The availability of precise information enables consumers to make informed choices about healthy and sustainable diets that benefit their health and wellbeing while lowering healthcare expenditures. To encourage consumers to make knowledgeable, healthy, and sustainable food preferences, the Commission will suggest harmonized mandatory front-of-pack nutrition labeling and extend required origin or provenance evidence to particular products while fully considering the single market's implications (Farm To Fork Strategy, n.d.).

Additionally, the Commission will study methods to harmonize voluntary green claims and develop a framework for sustainable labeling that addresses food items' nutritional, climatic, environmental, and social aspects in concert with other relevant efforts. Additionally, the Commission will investigate novel methods of providing information to consumers through alternative media, including digital, to increase the availability of food information, particularly for visually impaired individuals. To increase the availability and affordability of sustainable food and encourage healthy and sustainable nutrition in organizational catering, the Commission will evaluate the most effective method for establishing minimum required sustainability requirements for food procurement. This will assist cities, regions, and public authorities in fulfilling their responsibilities by procuring sustainable food for schools, hospitals, and public institutions and promoting sustainable agricultural methods such as organic farming (Farm To Fork Strategy, n.d.).

The Commission will set an example by enforcing sustainable criteria in its canteen food contract. It will also conduct a review of the EU's school system to maximize its impact on sustainable food consumption, with a particular emphasis on instructional messaging emphasizing the significance of good nutrition, sustainable food production, and food waste reduction (Farm To Fork Strategy, n.d.). Tax benefits should also be used to accelerate the transformational change of our food system and inspire customers to adopt sustainable and healthy eating habits. The Commission's proposal on VAT rates (which is presently being debated in the Council) may enable the Member States to make more targeted use of rates, for example, to assist organic fruit

and vegetables. EU tax regimes should also strive to ensure that the prices of various foods reflect their actual costs in terms of natural resource use, pollution, greenhouse gas emissions, and other environmental externalities (Farm To Fork Strategy, n.d.).

2.4.5 Decreasing food loss and waste

Combating food loss and waste is critical for sustainability (Farm To Fork Strategy, n.d.; Stenmarck et al., 2016). Reduced food waste benefits customers and operators alike, and the recovery and redistribution of extra food that would have been wasted otherwise has a significant social impact. Additionally, it integrates policies on nutrient and secondary raw material reclamation, feed production, food security, biodiversity, bioeconomy, waste management, and renewable energy. By 2030, the Commission intends to halve per capita food waste at the retail and consumer level (Target 12.3, n.d.). It will establish a baseline and propose legally enforceable objectives for food waste reduction throughout the EU by using an updated method for assessing food waste and data anticipated from the Member States in 2022 (Farm To Fork Strategy, n.d.). The Commission will include food loss and waste prevention in other EU programs. Date markings ('use by' and 'best by' dates) are often misunderstood and misused, resulting in food waste. The Commission will amend EU regulations to include consumer research. Along with measuring food waste, the Commission will look at food losses throughout the manufacturing process and measures to avoid them. Coordination of action at the EU level will bolster national efforts, and the recommendations of the EU Platform on Food Losses and Waste will serve as a guide for all parties (Farm To Fork Strategy, n.d.)..

2.4.6 Preventing food fraud throughout the food supply chain

Food fraud puts the sustainability of food systems in jeopardy. It misleads customers and obstructs their ability to make educated decisions. It jeopardizes food safety, ethical business practices, market resilience, and eventually, the single market. In this sense, a zero-tolerance policy backed up by strong deterrents is critical. The Commission will intensify its battle against food fraud to provide a fair playing field for businesses and bolster control and enforcement agencies' capabilities. It will collaborate with Member States, Europol, and other agencies to strengthen food fraud coordination by using EU data on traceability and alarms. Additionally, it will suggest tighter dissuasive measures and enhanced import restrictions and assess the prospect of strengthening the European Anti-Fraud Office's coordination and investigation powers (OLAF) (Farm To Fork Strategy, n.d.).

2.4.7 Empowering the Transition

Research and innovation (R&I) are critical drivers of the focus on green, healthy, and inclusive food systems at all stages of production and consumption. R&I may assist with developing and

testing solutions, overcoming obstacles, and identifying new market prospects (European Research and Innovation for Food and Nutrition Security, 2016; Farm To Fork Strategy, n.d.) The study will focus on the microbiome, seafood, and urban food systems and expand the accessibility and origin of alternative proteins such as plant, microbial, marine, and insect-based proteins and meat replacements. A mission-focused on soil health and food will seek to create solutions for reestablishing the health and function of soil. Through focused cooperation on agroecological living labs, new information and innovations will also be used to scale up agroecological systems in primary agriculture. This will aid in the reduction of pesticide, fertilizer, and antibiotic usage. To boost innovation and knowledge transfer, the Commission will collaborate with the Member States to improve the European Innovation Partnership on Agricultural Productivity and Sustainability (EIP-AGRIparticipation) in Strategic Plans. The European Regional Development Fund aims to invest in innovation and cooperation throughout food value chains via smart specialization. A new Horizon Europe partnership on "Sustainable and safe food systems for people, planet, and climate" will establish a research and innovation governance mechanism that will engage the Member States and food system participants from Farm-to-Fork to deliver innovative solutions that benefit nutrition, food quality, climate, circularity, and communities. All farmers and rural communities need access to a fast and dependable internet connection. This is critical for rural employment, business, and investment and for increasing rural residents' quality of life in healthcare, entertainment, and e-government. Access to high-speed internet will also allow the widespread use of precision farming and artificial intelligence. It will enable the EU to use its worldwide technological supremacy in satellites completely. This will eventually result in economic savings for farmers, improved soil management and water quality, less fertilizer, pesticide, and greenhouse gas emissions, increased biodiversity, and a better environment for farmers and people. The Commission intends to hasten the roll-out of high-speed internet in rural regions to meet the Commission's goal of universal access by 2025. Investments will be required to foster innovation and the development of sustainable food systems. The InvestEU Fund will promote investment in the agro-food industry by mitigating risk for European firms and easing access to funding for SMEs and mid-cap enterprises via EU budget guarantees (Establishing the InvestEU Programme, 2018; Farm To Fork Strategy, n.d.). By 2020, the EU framework for sustainable investments (EU taxonomy) and the updated strategy on sustainable finance will encourage the financial industry to invest more responsibly, especially in agricultural and food production. Additionally, the CAP must significantly allow financial assistance for farms to increase their resilience and expedite their green and digital development (Farm To Fork Strategy, n.d.).

3 LITERATURE REVIEW

3.1 Challenges of Conventional Farming and Benefits of Organic Farming

Organic agriculture is often promoted to mitigate agriculture's detrimental influence on the environment (Boone et al., 2019; Sandhu et al., 2010; Seufert et al., 2012). It focuses on food production techniques that have a minimum adverse effect on ecosystems, animals, and people (Boone et al., 2019; Council, 2010; Seufert et al., 2012). Rather than using synthetically produced inputs such as fertilizers and pesticides, organic farm management methods depend on and receive benefit from biological sequences by, for instance, a suitable assortment of crop alternations and cover crops, well-considered selections concerning the punctuality of sowing, and mechanical farming, and taking advantage of biological control and natural pesticides (Boone et al., 2019; Gomiero et al., 2011; Meier et al., 2015).

Organically cultivated land has around 30% more biodiversity than conventionally cultivated land (An Action Plan for the Development of Organic Production, 2021). Pollinators, for example, benefit from organic farming. Organic farmers are forbidden from using synthetic fertilizers and are permitted to use only a restricted number of chemical pesticides. Additionally, using genetically modified organisms (GMOs) and ionizing radiation is forbidden, and antibiotic use is highly limited (An Action Plan for the Development of Organic Production, 2021).

Table 2 summarizes the significant distinctions between organic and conventional arable farming according to two categories, fertilization and crop protection (Boone et al., 2019; Council, 2010; Viaene et al., 2016).

	Conventional Farming	**Organic Farming**
Fertilization	Manure is predominantly composed of organic matter and extensive consumption of mineral fertilizers	Manure is predominantly composed of organic matter
	While organic matter stockpiling is essential, it is not the primary objective	It is critical to maintain an organic matter supply
	Composting is used sparingly.	Compost is frequently used.

	Extensive utilization of mineral fertilizers, mostly chemically modified natural sources	Utilization of natural and untreated mineral fertilizers to a limited extent
Crop protection	Plant protection products manufactured synthetically	Plant protection products produced from nature
	Chemically primarily	Mechanically primarily

TABLE 2 - MAIN DISTINCTIONS BETWEEN ORGANIC AND CONVENTIONAL ARABLE FARMING (BOONE ET AL., 2019; COUNCIL, 2010; VIAENE ET AL., 2016)

3.2 Organic farmland in Europe and in Austria

In the previous decade, the organic farming area in Europe has expanded by over 66%, rising from 8.3 million hectares in 2009 to 14.6 million hectares in 2019 (Farm To Fork Strategy, n.d.). It presently represents 8.1% of the total used agricultural land in the EU. A significant rise in retail sales has accompanied this area expansion. Retail sales have more than doubled in value over the previous decade, from over EUR 18 billion in 2010 to over EUR 41 billion in 2019 (Farm To Fork Strategy, n.d.).

Austria is the EU's leader in organic farming. Around 26% of the nation is organically cultivating their goods, and one in every five farms is organic (Organic Food: AMA Export, n.d.). Austria has been a vocal opponent of genetic engineering from the outset. As a result, not a single hectare of arable land is utilized to grow genetically modified crops. Organic agriculture, which is essentially opposed to genetic engineering, has therefore developed into a major success story in the

country. Austria has 8.4 million hectares in size, of which 2.8 million hectares are utilized for agriculture, all of which is fully GMO-free (Facts and Figures: AMA Export, n.d.).

Figure 9 showcases counties with an organic share of the total agricultural land by country and country group in 2019. The figure shows Austria is situated in the second spot, behind Liechtenstein, with a 26.1% organic share of the total agricultural land (The World of Organic Agriculture, 2021).

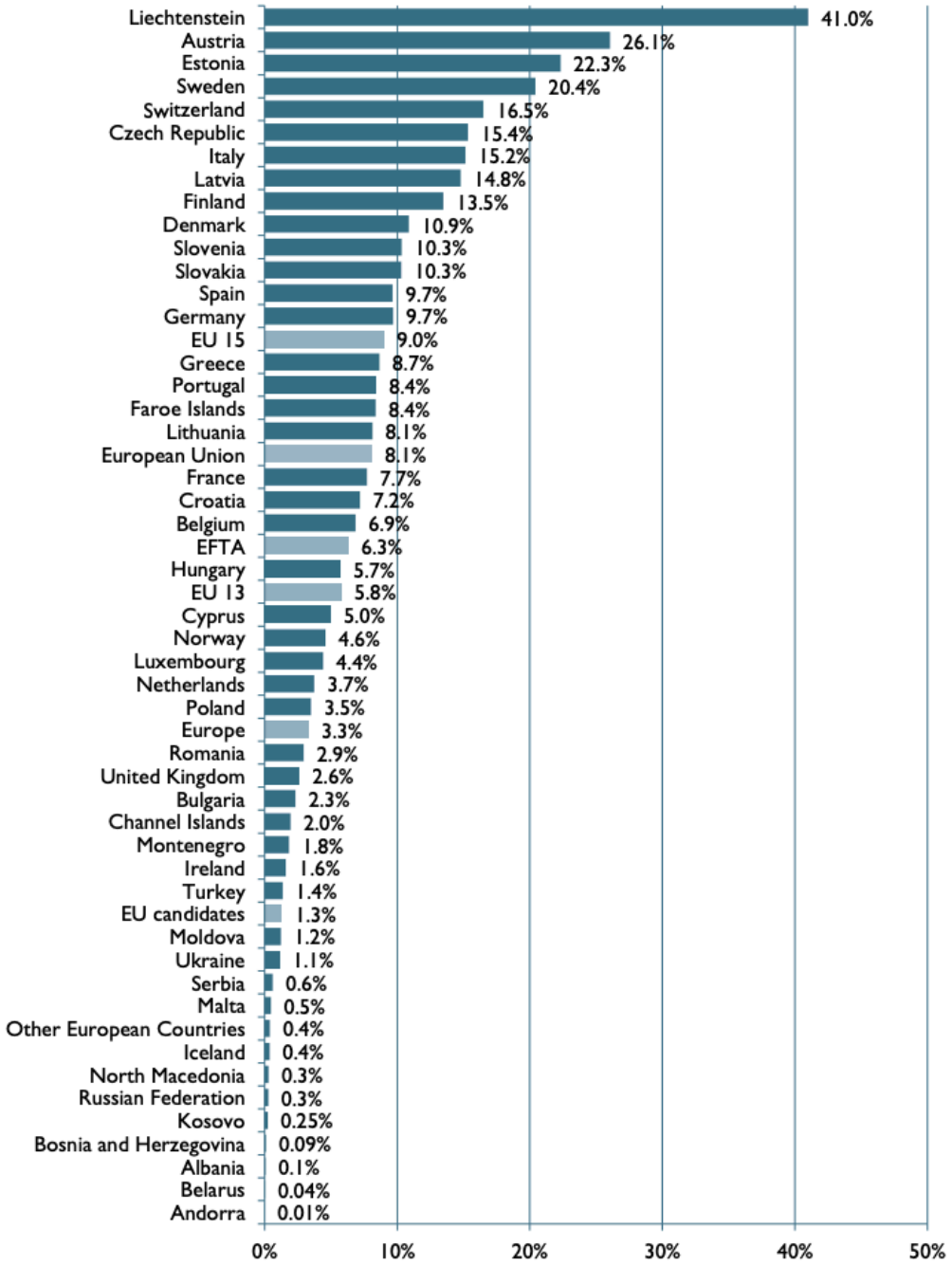

FIGURE 9 - ORGANIC SHARE OF THE TOTAL AGRICULTURAL LAND BY COUNTRY AND COUNTRY GROUP IN 2019 (*THE WORLD OF ORGANIC AGRICULTURE*, 2021: 234)

Additionally, Figure 10 showcases the organic retail sales value by country in 2019. The figure shows that Austria is positioned in ninth place in Europe, with retail sales being 1.920 million euros in 2019 (The World of Organic Agriculture, 2021).

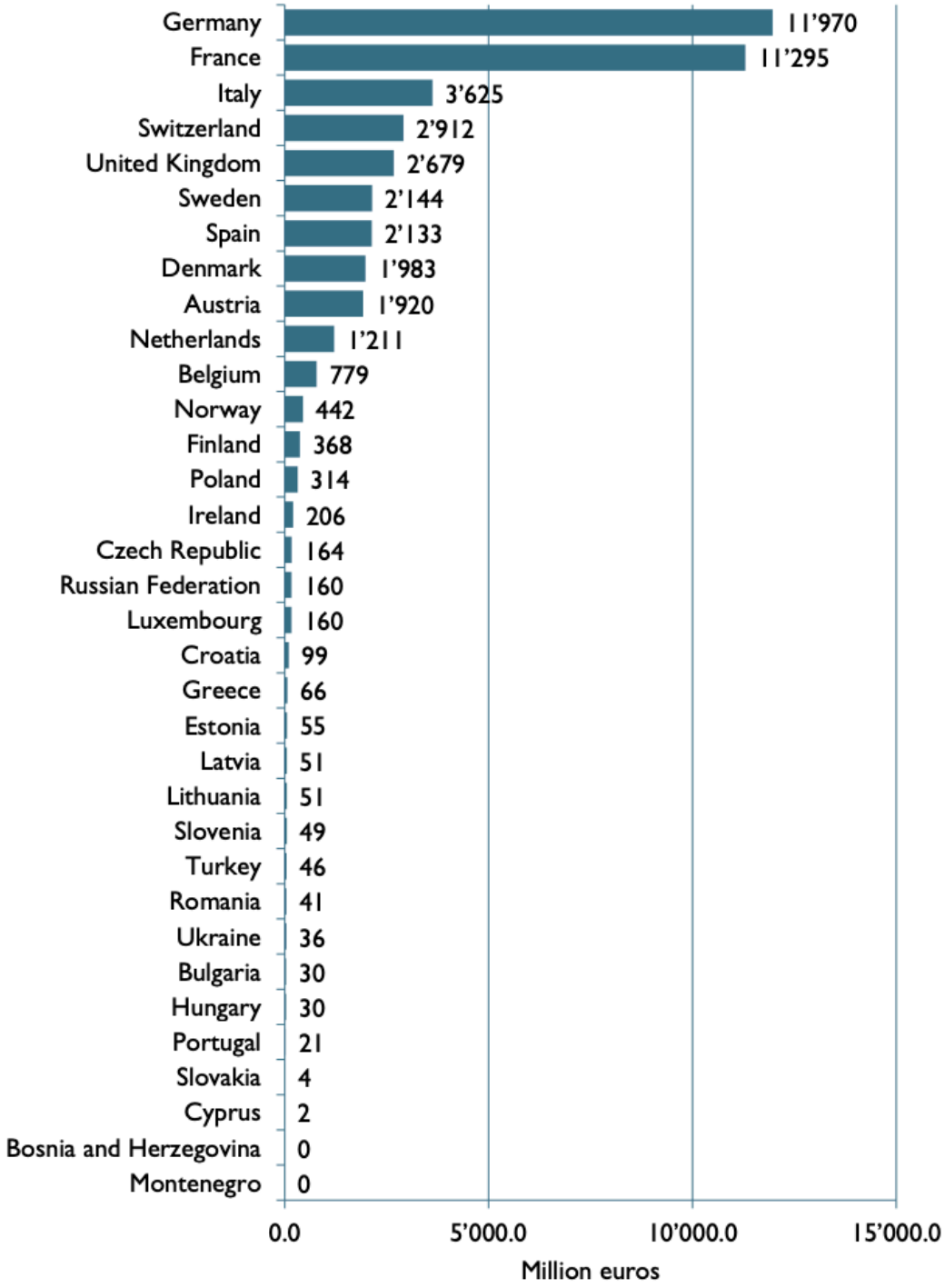

FIGURE 10 - ORGANIC RETAIL SALES VALUE BY COUNTRY IN 2019 (*THE WORLD OF ORGANIC AGRICULTURE*, 2021: 249)

Furthermore, besides having the ninth largest organic food market in Europe, Austria is also highly ranked regarding the highest per capita consumption in 2019. Figure 11 showcases the ten countries with the highest per capita organic food consumption in 2019. We can see that Austria is fourth with 216 euros spent per capita on organic food in 2019 (The World of Organic Agriculture, 2021).

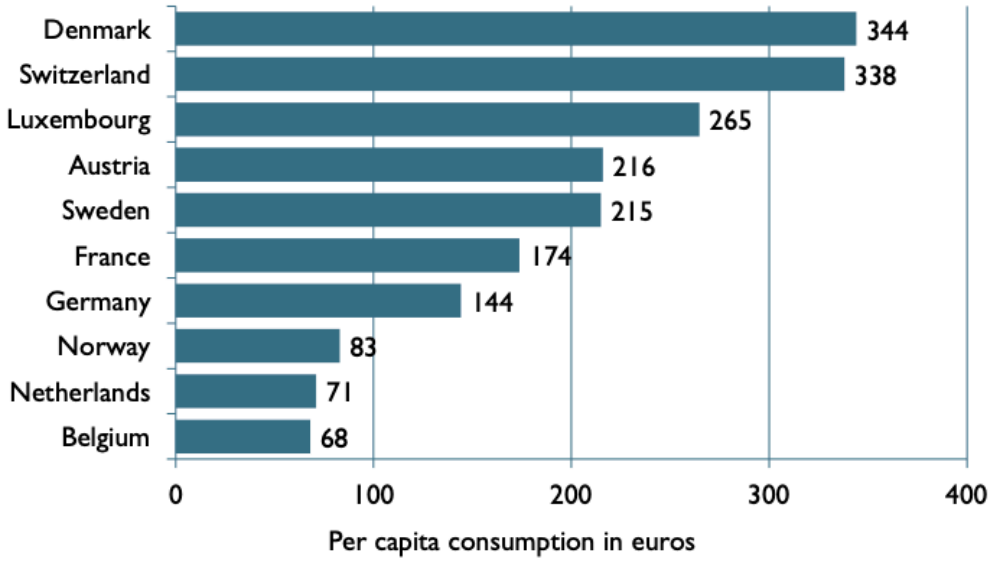

FIGURE 11 - HIGHEST PER CAPITA CONSUMPTION OF ORGANIC FOOD IN EUROPE (*THE WORLD OF ORGANIC AGRICULTURE*, 2021: 252)

In Austria, safe drinking water is provided directly from the tap, obviating the need for chlorine addition (Facts and Figures: AMA Export, n.d.). Additionally, farm animals consume clean water. This is one of the pillars of the highest-quality dairy and meat goods. Austria has far more water than it uses. The majority of it originates in the mountains, while the remainder is groundwater. Roughly 3% is used. Households and industry utilize almost two-thirds of this modest fraction, while agriculture requires just 5% (Facts and Figures: AMA Export, n.d.). Austria has also been a land of alpine pastures for thousands of years. There are around 8,000 of these controlled grassland mountain landscapes. During the summer, the cattle graze peacefully on the alpine meadows (Facts and Figures: AMA Export, n.d.). This is similar to elevation training for athletes by having sunshine, fresh air, plenty of activity, and the increased red blood cell count required to carry oxygen at a higher altitude. The animals feed on a range of alpine grasses and plants. Gourmets love the unique flavor subtleties found in milk and cheese, and meat. Mountain meadows spreading all the way to the mountains' alpine area. They sculpt the terrain and create unique habitats for creatures. Regarding the well-being of animals in Austria, five principles outlined in Figure 12 showcase its importance (Facts and Figures: AMA Export, n.d.).

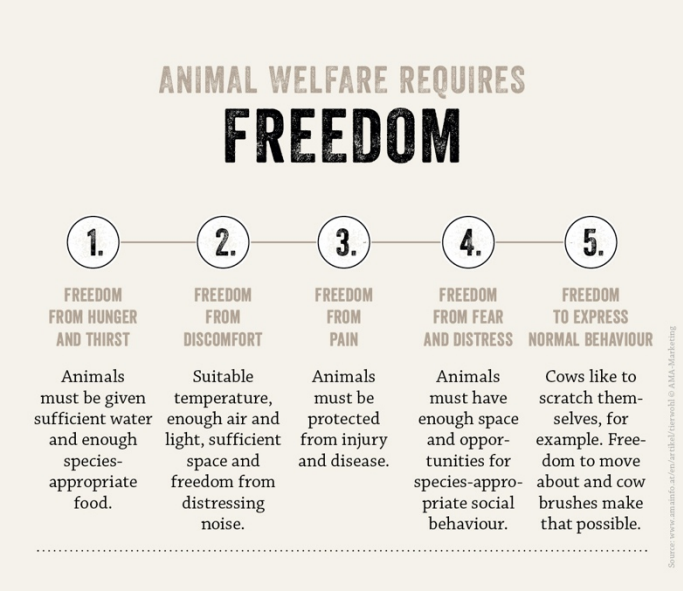

FIGURE 12 - ANIMAL WELL-BEING IN AUSTRIA (*FACTS AND FIGURES: AMA EXPORT*, N.D.)

Hay milk has been classified as a "Traditional specialty guaranteed" (TSG) in the Land of the Alps since 2016. Approximately 500,000 tonnes of hay milk are made each year, representing around 16% of Austrian milk production. Consumers prefer this milk, which is made under unique circumstances, and it is gaining popularity. The unique method of hay production serves as the foundation for this. Meanwhile, summer grasses and herbs are fed to hay milk cows, whereas winter hay is fed to cows. This requires some effort from the farmer: the grass needs to be cut at the appropriate time and dried on the meadow using the sun's energy. They turn the hay and transport it to the farm, where it is housed in appropriate facilities and given to the animals. In 2016, the German-speaking region received the EU quality label TSG for the first time. Since 2019, sheep and goat hay milk may also bear the EU label (Facts and Figures: AMA Export, n.d.). In Austria, farming has always been on a smaller scale. Over 90% are family-owned businesses. Typically, a farm will have numerous generations living and working on it. Each member of the family contributes expertise and experience. Numerous farms have existed for several hundred years, the oldest dating back to 1313. What matters here is sustainability and heritage. A farm's average size is roughly 20 hectares. Each of the roughly 25,000 dairy farms has a median of 22 cows. 70% of the nation is mountainous, which requires effort due to the grade and weather. Due to the steep hills, some tasks, such as cutting grass, must also be performed manually (Facts and Figures: AMA Export, n.d.).

3.3 Theory of Planned Behavior

The theory of planned behavior (TPB) is an expansion of the theory of reasoned action (TRA) concept, allowing it to apply to behaviors that are not wholly within the individual's volitional control (Ajzen, 2006). They are meant to give a succinct account of the informational and motivational impacts on behavior, allowing for its prediction and comprehension (Manstead & Parker, 1995). As the theory states, human behavior is directed according to these three contemplations

- Behavioral beliefs – views regarding the behavior's anticipated repercussions. In their aggregation, behavioral beliefs establish an attitude toward the behavior that is either favorable or unfavorable (Ajzen, 2006).

- Normative beliefs – assumptions about other people's normative expectations. Normative views arise in perceived social pressure or subjective norm in aggregate forms (Ajzen, 2006).

- Control beliefs – beliefs concerning the existence of circumstances that may enhance or inhibit behavior performance. Control beliefs generate apparent behavioral control in its aggregates (Ajzen, 2006).

The establishment of a behavioral intention is influenced by attitude toward the activity, subjective norm, and sense of behavioral control (Ajzen, 2006). In general, the person's desire to do the activity in issue should be stronger the more positive the attitude and subjective norm, and the higher the perceived control. People are anticipated to follow their goals when the chance presents itself if they possess a sufficient degree of real behavioral control. (Ajzen, 2006). Thus, it is thought that purpose is the direct cause of conduct. However, since many activities include execution challenges that might restrict volitional control, it is useful to also evaluate perceived behavioral control in addition to intention. Insofar as perceived behavioral control is accurate, it may serve as a surrogate for real control and contribute to the prediction of the behavior in the issue (Ajzen, 2006). Figure 13 showcases the Theory of Planned Behavior (Ajzen, 2006).

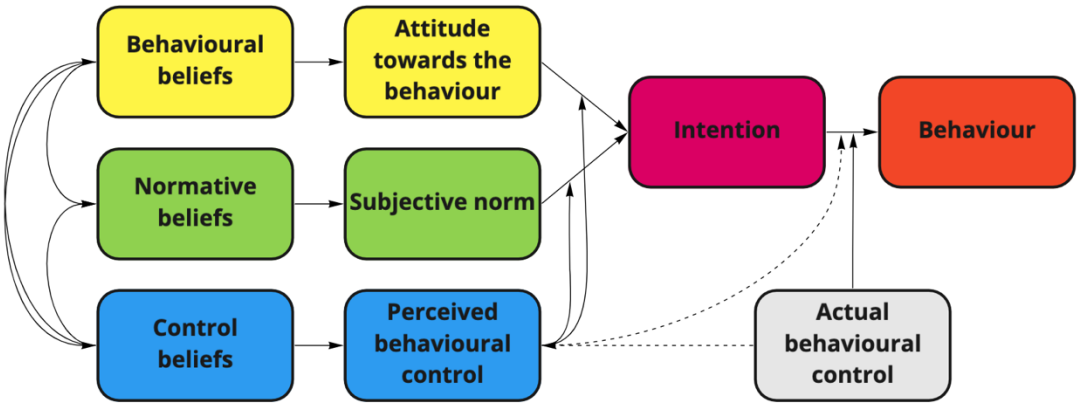

FIGURE 13 - THEORY OF PLANNED BEHAVIOUR (AJZEN, 2006)

3.4 Social Identification Theory

Social identification refers to an individual's feeling of belonging to a particular group or organization. In this context, a group encompasses a reference group, and it encompasses not just a group to which individuals belong but a group to which individuals desire to join (Ashforth & Mael, 1989; Hogg et al., 1995; Kim et al., 2001). Social identification theory is a theory of group development and the intergroup connection that successfully explains the distinction between group and interpersonal phenomena (Hogg et al., 1995; Hsu et al., 2015). Initially, social identification theory was established to understand intergroup attitudes and group-relevant behaviors regarding an individual's self-definition. Thus, participation in a group determines at least a

portion of its members' identities, their social identities. These three assumptions describe the theory's significant predictions

- Individuals seek to create or increase good self-esteem.
- A portion of a person's self-concept, or social identity, is determined by his or her group affiliations.
- To retain a good social identity, the individual seeks to differentiate himself or herself from the ingroup and relevant outgroups (van Dick et al., 2005).

Psychologists in the United States have traditionally conceived humans as autonomous beings and interpreted the diversity of an individual's social identities as diverse facets of that individual's self-concept. On the other hand, European psychologists prefer to define social identities as extensions of the individual's self that are incorporated into a social network (Hwang, 1999).

Figure 14 showcases the theory of social identification (Brewer, 1991).

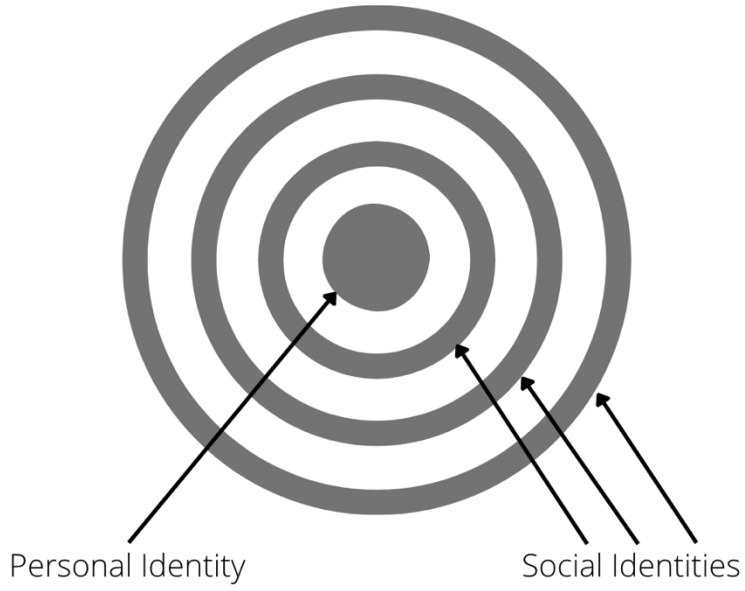

FIGURE 14 - SOCIAL IDENTIFICATION THEORY (BREWER, 1991)

3.5 Hypothesis Development

In this chapter, firstly the conceptual framework is discussed, following with the hypothesis outlined for the research.

3.5.1 Conceptual Framework

Figure 15 showcases the conceptual framework used in this research.

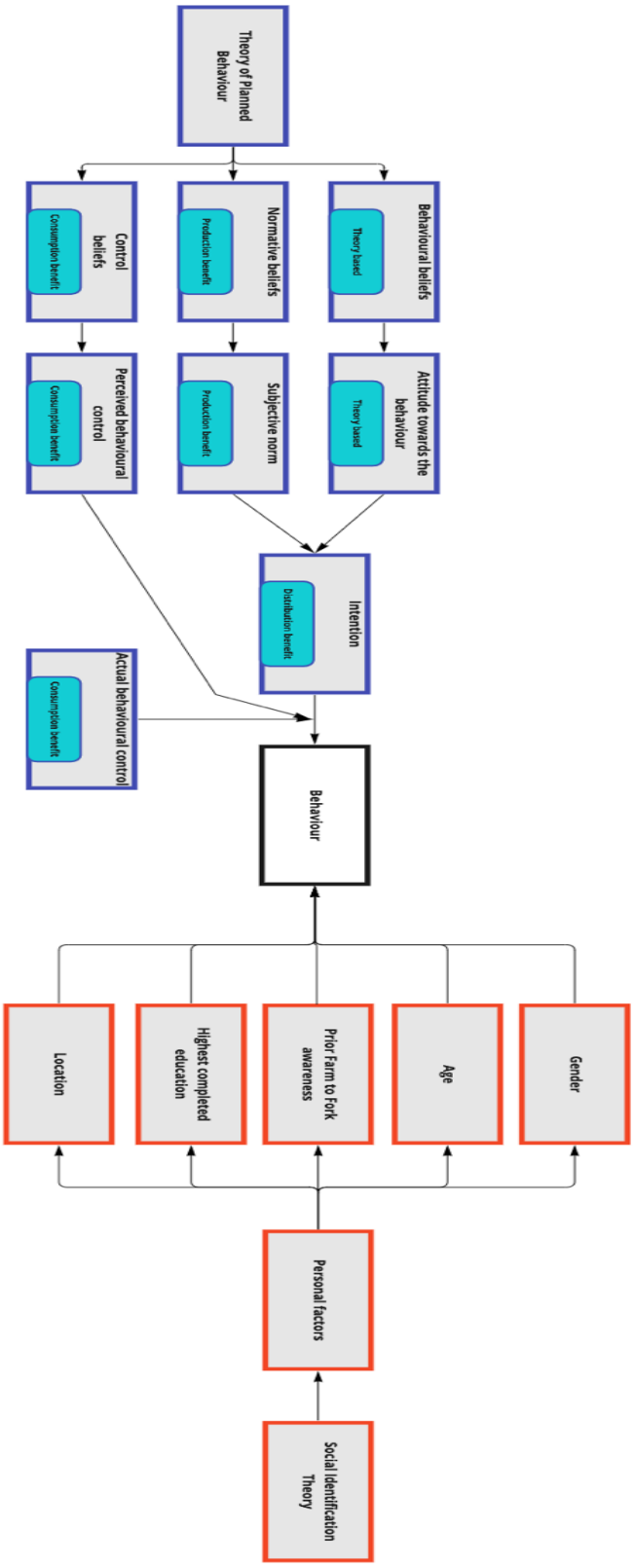

FIGURE 15 - CONCEPTUAL FRAMEWORK

The conceptual framework consists of two theories discussed in the Literature Review segment, the Theory of Planned Behaviour and the Social Identification Theory. The Theory of Planned Behaviour is positioned on the left side of the conceptual framework, outlined with a dark blue outline and showcased in Figure 16.

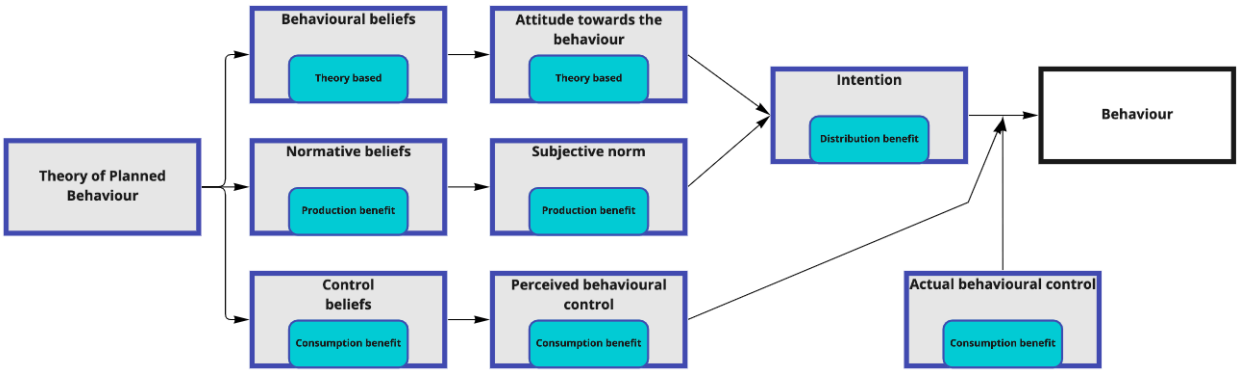

FIGURE 16 - CONCEPTUAL FRAMEWORK THEORY OF PLANNED BEHAVIOR

From looking at Figure 16, we can see that the model is comprised of the proposed Farm to Fork benefits. Namely, the behavioural beliefs which lead into the attitude towards the behaviour are theory based. The normative beliefs which lead to the subjective norm are based on the production benefit of the Farm to Fork strategy.The perceived behavioural control and actual behavioural control are based on the consumption benefit. Lastly, the intention is based on the distribution benefit brought by the Farm to Fork strategy.

The Social Identification Theory is positioned on the right side of the conceptual framework, outlined with a dark orange outline and showcased in Figure 17.

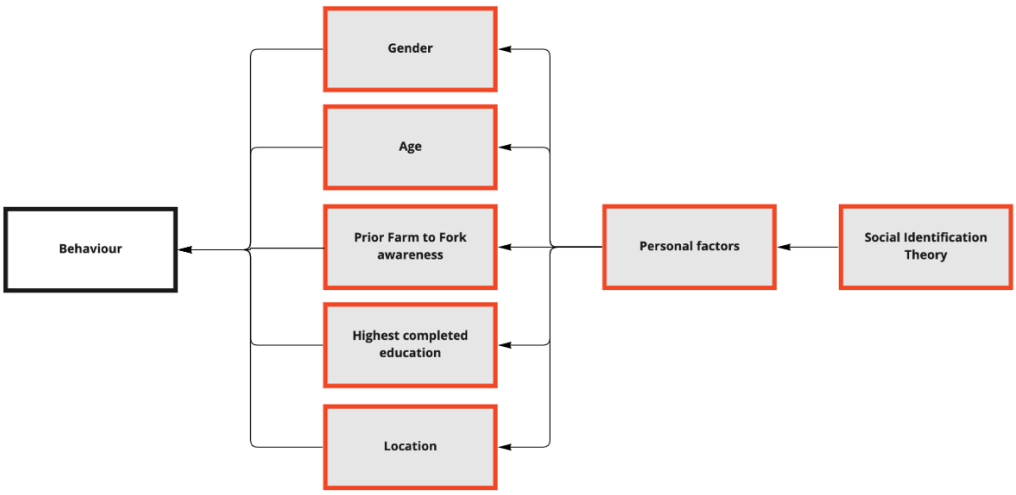

FIGURE 17 - CONCEPTUAL FRAMEWORK SOCIAL IDENTIFICATION THEORY

From looking at Figure 17, it can be seen that five personal factors have been outlined. Those are gender, age, prior Farm to Fork awareness, highest completed education, and location. All of these factors are leading into behaviour.

The structure and reasoning behind the conceptual framework are outlined in the Methodology chapter by outlining which survey questions correspond to which groups, after the research instrument and research questions are outlined. Additionally, in the Results chapter are the tests to determine the conceptual framework relationships.

3.5.2 Hypotheses

Hypothesis 1 – There is a significant difference between male and female consumers residing in Austria that have a positive attitude towards organically produced products.

The assumption for Hypothesis 1 came due to a continiuos increase in demand for organically produced products in Austria. AgarMarkt Austria (AMA) does their annual rolling agricultural market analysis, which is the basis for this hypothesis. The data was collected from at least 2,800 households in Austria. Figure 18 showcases the quantitative organic shares of purchases in food retail in percentages in 2019, 2020 and from January till September 2021. The data collected was for 10 categories of organically produced products, those being milk & extended shelf life (ESL) milk; natural yoghurt; butter; cheese; meat & poultry; sausage & ham; fresh fruit; fresh vegetables; potatoes and eggs. Out of all the product categories, 'Butter' is the only is the only one to decrease in comparison to 2019, a 0.2% decrease, and now accumulating to 8.7% (*Das RollAMA*, 2021). Furthermore, this hypothesis is also theory related, related to the theory of planned behavior, namely the attitude towards the behavior aspect, outlined in Figure 18.

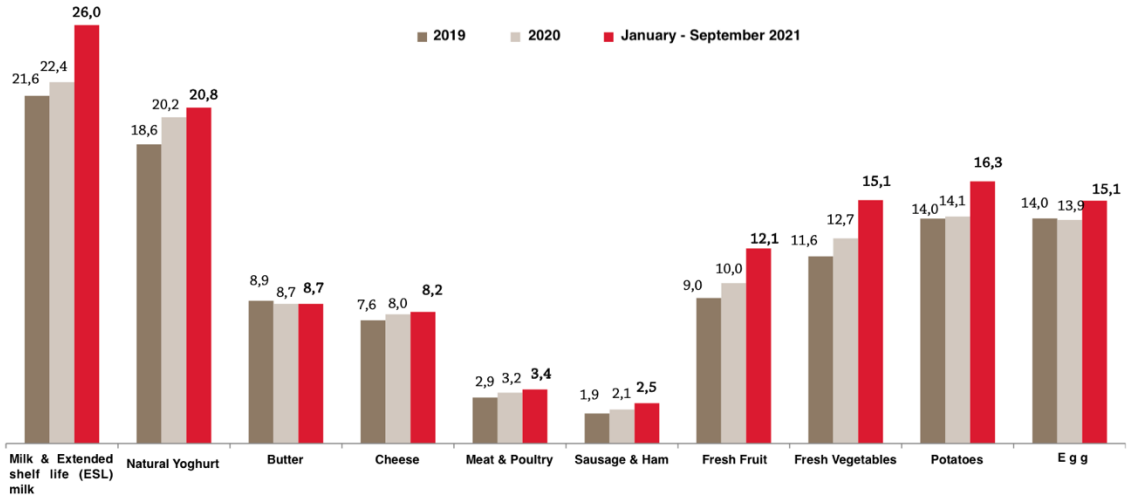

FIGURE 18 - HYPOTHESIS 1 & 2 ASSUMPTIONS % (*DAS ROLLAMA*, 2021)

Due to a continuous increase in the shares of organic purchases in food retail, it is assumed that residents in Austria have a positive atittuted towards organically produced products.

Hypothesis 2 - There is a significant difference between male and female consumers residing in Austria that believe they are expressing their desired identities when purchasing organic products.

Similarly to Hypothesis 1, Hypothesis 2 originates from the same rolling agricultural market analysis in Austria (*Das RollAMA*, 2021).. Therefore, it is assumed that residents in Austria believe that when purchasing organic prodcuts, they are expressing their desired identities. Additionally, this theory and assumption are supported with all proposed health, societal and environmental benefits brought by the Farm to Fork strategy that are outlined in the Literature Review chapter. Furthermore, this hypothesis is also theory related, related to the social identification theory, namely the respondents person factor, in this case gender, outlined in Figure 18.

Hypothesis 3 – There is a significant difference between age groups of consumers residing in Austria prepared to pay at least 10% more for agricultural goods produced by carbon reducing processes.

A Eurobarometer survey commissioned by the European Commission conducted 27,237 face-to-face interviews in August and September 2020. From that, 1,008 interviews were conducted in Austria and the results were published in October 2020. The assumption for Hypothesis 3 comes from the third section of the interview, in particular question QA22 (*Europeans, Agriculture and the CAP*, 2020). Figure 19 showcases the exact question and the assumption comes from the second sub question which is as follows “You are prepared to pay 10% more for agricultural products that are produced in a way that limits their carbon footprint” (*Europeans, Agriculture and the CAP*, 2020).

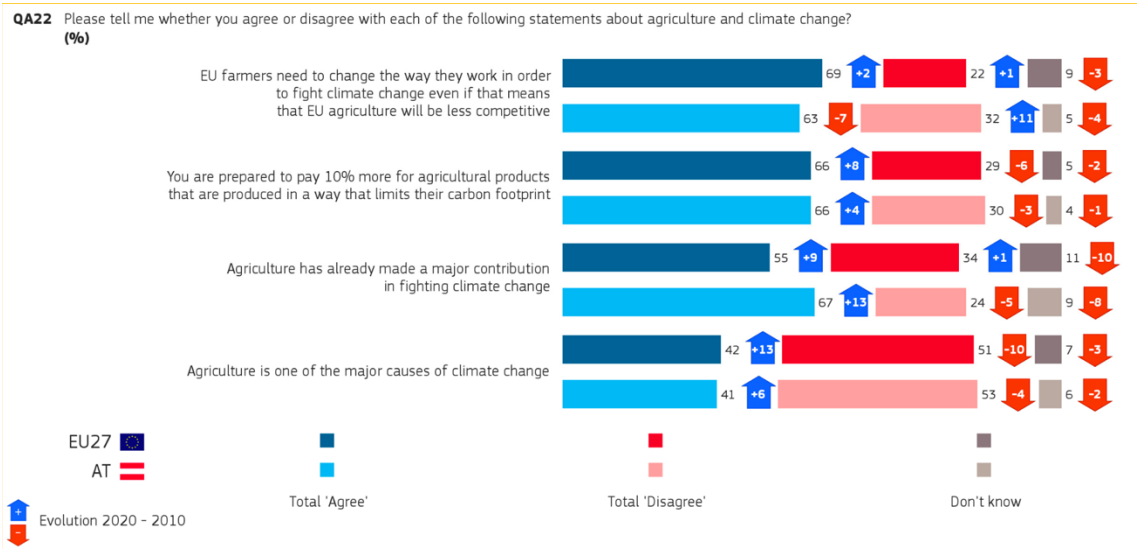

FIGURE 19 - HYPOTHESIS 3, 4 & 5 ASSUMPTIONS (*EUROPEANS, AGRICULTURE AND THE CAP*, 2020: 3)

Looking at the responses, which are displayed in percentages, and focusing on Austria, we can see that a majority of respondents agree with the statement, a total of 66% of respondents,

which is a 4% increase from 2010. Additionally, we can see that there was a 3% decrease from 2010 in respondents that disagree with the statement, now totalling to 30%. Lastly, another decrease can be seen for respondents that do not know if they are prepared to pay more, this time by only 1%, now totalling to 4%.

Hypothesis 4 – There is a significant difference, based on educational attainment, between consumers residing in Austria who perceive that agriculture has already made a major contribution in fighting climate change.

Hypothesis 4 originates from the same study and same question as Hypothesis 3. The assumption for Hypothesis 4 comes from the third sub question which is as follows "Agriculture has already made a major contribution in fighting climate change" (*Europeans, Agriculture and the CAP*, 2020: 3).

Looking at the responses on Figure 19 and focusing on Austria, we can see that a majority of respondents agree with the statement, a total of 67% of respondents, which is a 13% increase from 2010. Furthermore, we can see that there is a 5% decrease from 2010 in respondents that disagree with the statement, now totalling to 24%. Similarly, there is a decrease of 8% in respondents that do not know if they agree or disagree with the statement, now totalling to 9%.

Hypothesis 5 – There is a significant difference of prior Farm to Fork awareness between consumers residing in Austria that perceive agriculture as one of the major causes of climate change.

Hypothesis 5 originates from the same study and question as Hypothesis 3 and Hypothesis 4. The assumption for Hypothesis 5 comes from the fourth, and last, sub question which is as follows "Agriculture is one of the major causes of climate change" (*Europeans, Agriculture and the CAP*, 2020: 3).

Taking a look at the responses on Figure 19 and focusing on Austria, we can see that unlike with Hypothesis 3 and Hypothesis 4, the majority of respondents disagree with the statement, totalling to 53%, however it is a 4% decrease from 2010. Furthermore, there is a 6% increase in respondents that agree with the statement, now totalling to 41%. And lastly, there is a 2% decrease in respondents that do not know if they agree or disagree with the statement, now totalling to 9%.

Hypothesis 6 – There is a significant difference between consumers residing in Austria that do and do not find television as an important source of information that conveys strengthening the farmer's position in the supply chain.

A Eurobarometer survey commissioned by the European Food Safety Authority conducted 27,655 face-to-face interviews in April 2019. From that, 1,039 interviews were conducted in Austria and the results were published in June 2019. The assumption for Hypothesis 6 comes from

the first section of the interview, in particular question QD5T (*Eurobarometer on Food Safety in the EU*, 2019).

Figure 20 showcases the exact question where the assumption comes from. The respondents were allowed to choose up to 4 answers and the question is "Which of the following are your main sources of information about food risks? Firstly? And then?" (*Eurobarometer on Food Safety in the EU*, 2019)

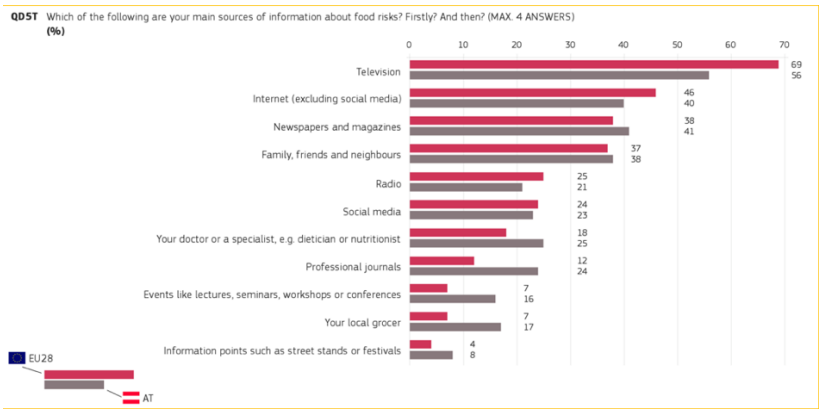

FIGURE 20 - HYPOTHESIS 6 ASSUMPTION (*EUROBAROMETER ON FOOD SAFETY IN THE EU*, 2019: 2)

From looking at the results and focusing on Austria, we can see that the majority of respondents consider television as their main source of information in relation to other options, a total of 56% respondents.

4 METHODOLOGY

4.1 Introduction

As outlined in the introduction chapter, the main research question for this research is:

What is the consumer perception of proposed food production and consumption benefits brought by the Farm to Fork strategy in Austria?

The methodology chapter first outlines the research design that is being used in this research. Firstly, the research instrument used is explained in depth, including the sampling method used to obtain data. Following that, the data analysis section outlines how the data is analyzed.

4.2 Research design

The practises of collecting, assessing, assessing, and presenting the results of a study are all part of quantitative approach. In survey research, precise techniques are used in order to select a sample and population, stipulating the kind of design, gathering and analyzing data, reporting the outcomes, developing an understanding, and detailing the research in a survey study-like style. A survey design inspects a population samle to construct a quantitative representation of tendencies, outlooks, or judgements. The researcher deduces implications to the complete population from obtained sample results (Creswell, 2014). As outlined in the Hypothesis development segment of the literature review Hypothesis 3, 4, 5 & 6 are based on numerical data previously obtained. Therefore, to successfully test these hypotheses, a quantitative research approach is the most applicable approach in order to better understand the significance of the hypotheses. Additionally, the collected data is visually presented therefore easier to read and understand. In order to test the theories a conceptual framework is developed. The two theories are mentioned in the Literature Review and are the Theory of Planned Behavior and the Social Identification Theory. The conceptual framework is discussed in greater detail in this chapter.

4.3 Research instrument

By examining a sample of a population, a survey design gives a quantitative or numerical account of its trends, attitudes, or views. The researcher generalizes or makes assumptions about the population based on sample data. A survey technique section is structured in a consistent manner (Creswell, 2014).

The questionnaire is designed for surveying the Austrian population and questions are sorted along four sections: sustainable food production; sustainable food processing & distribution; sustainable food consumption and personal information. The questions are phrased in the form

of statements to which participants respond to a Likert scale from 1 to 5, 1 being “I fully disagree”, 2 being “I disagree, 3 being “Neutral”, 4 being “I agree” and 5 being “I fully agree” in order to learn more about their perceptions, attitudes and behavior. Additionally, certain questions are also formulated as direct questions allowing participants the option to either provide a single answer or a multiple-choice answer. Lastly, in the personal information section, there are also open-ended questions in order to learn more about individual aspects.

The first group, sustainable food production, has three subgroups in it, organic farming; environmental impacts of organic farming and organic farmer benefits. The first subgroup, organic farming, allows participants to assess five statements on a Likert scale. Statements about organic farming are included to see whether participants agree or to disagree that organic farming is complying with specific rules on pesticides, fertilizers and antibiotics; organic products are produced with higher respect for animal welfare; organic farming is making more efficient use of resources; agriculture has already made a major contribution in fighting climate change; and that agriculture is one of the major causes of climate change. The second subsection, environmental impacts of organic farming, is based on single or multiple choice questions, depending on the participants beliefs. The purpose is to let respondents choose which of the suggested factors are a consequences of organic farming. The pre-defined answer categories are as the following: protection of the environment and climate; the long-term fertility of the soil; enhancing genetic biodiversity and increasing yields; a non-toxic environment; having high animal welfare standards and enhancing animal welfare; being beneficial to pollinators; reducing climate and environmental footprint; and prohibited and restricted use of pesticides and fertilizers. The third and last subsection, organic farmer benefits, like the first subsection provides four statements which need to be assessed on a five point Likert scale. Statements about the benefits of organic farmers help to understand whether respondents agree or disagree that it is an important priority to encourage conventional farmers to switch their practices to organic farming;; strengthening the farmer's position in the food supply chain is an important priority; participants are in favor of the European Union continuing to provide subsidy payments to farmers who carry out agricultural practices beneficial to the climate and the environment; and income support for organic farmers should increase over the next ten years.

The second section, sustainable food processing & distribution, has only one subsection included: benefits of shorter distribution channels. This subsection provides four statements which need to be assessed on a five point Likert scale. Statements about the benefits of shorter distribution channels help to identify whether participants agree or disagree that short supply chains are an important factor when they are purchasing their food; food is produced in a manner that respects local tradition and ‘know-how’ is an important factor for them when purchasing their food; food that comes from a known geographical area is important factor when they are purchasing their food; and if they would be willing to purchase seasonal products and not have all ingredients available all the time.

The third section, sustainable food consumption, has two subsections included: purchasing power and organic certificates. The subsection purchasing power consists of six statements and questions in total. The first question being single choice and asking participants to choose how much they spend monthly on organic products. The participants are allowed to choose from 0-25€; 26-50€; 51-75€; 76-100€; 101-150€; and more than 150€. The second question is also single choice and is asking participants how much more would they be willing to pay for agricultural products that are produced in a way that limits their carbon footprint. Similarly, to the first question of this subsection, the participants are able to choose from: not prepared to pay more; up to 10% more; up to 20% more; up to 40% more; up to 60% more; up to 85% more; up to a 100% more; and more than a 100%. The third question is a single or multiple-choice question which asks participants to select the products they usually purchase that are organic. The products are eggs; milk; yoghurt; butter; cheese; fruit; vegetables; bread and grains; fish; meat (poultry, pork, and beef); honey; snack foods; and beverages. The fourth question is also a single or multiple-choice question, depending on the participant's choice and it focuses on their preferred shopping mode. There are four different options provided: supermarkets; mini markets; farmers markets; and delivery. Similar to the previous two questions, it is is a single or multiple choice question asking participants from where they obtain information on food risk. The available answer options are television; local grocers; farmers; supermarkets; and restaurants. Lastly, the last question of the subsection is a single choice question asking participants which of the two factors, food safety or ethics and beliefs, are more important for them when buying food. Moreover, the second subsection, organic certification, is formulated as a statement which needs ot be assessed on a five point Likert scale. The statements help to understand if participants find the importance that food bears a label/certificate that guarantees quality and if they are aware of the EU quality labels and the EU organic farming logo.

Lastly, the personal information section includes seven subsections. The first one being an open-ended question asking participants to insert their age. The second one being a single choice question asking participants to select one from the following in regard to their gender (female; male; or diverse). The third one being a single choice question as well asking participants to select their highest completed education. The provided categories are the following: primary school; high school; Bachelor's degree; Master's degree; and diploma of Doctoral studies. Following that, question five is a statement to be assessed on a five point Likert scale asking participants about their awareness level of the 'Farm to Fork' strategy before they filled the questionnaire. Penultimately, question six is a statement to be assessed on a five point Likert scale and intends to find out whether respondents have a positive attitude towards organically produced products. Lastly, question seven is a statement-based question asking participants with the use of a Likert scale if they believe they are expressing their desired identity when purchasing organic products.

The research instrument of choice is an online survey tool, Typeform (see: https://www.typeform.com/). This online survey tool is chosen as the researcher has work experience with it from former corporate market research assignments. Additionally, the tool offers a wide range of features which the researcher is making use of. Features such as, connecting the results to Microsoft Excel and having responses recorded in real time; visually displaying data for each question; and most importantly for this research, being able to set up the survey in a way to guide participants to different questions after answering a certain way on a particular question. For instance, question 22 asks the participants to rate their awareness of EU quality labels and the EU organic farming logo. The statement needs to be assessed on a Likert scale from 1 to 5, 1 – "I fully disagree" – 5 "I fully agree", and participants that select 4 and 5 are taken to question 23, whereas participants that have select 1,2 or 3 skip question 23. Question 23 asks the participants to rate their awareness about EU quality labels and the EU organic farming logo. Similarly, question 28 asks participants about their awareness of the Farm to Fork strategy prior to taking part in the survey. Similar like in question 22, participants that have selected 4 or 5 on the Likert scale from 1 to 5, 1 – "I fully disagree" – 5 "I fully agree", are guided to question 29. Question 29 asks participants that are aware of the 'Farm to Fork' strategy prior to taking part in the survey, what their perception of the strategy is. Additionally, question 29 is also answered on the Likert scale from 1 to 5, 1 – "I fully disagree" – 5 "I fully agree".

The survey was online and accepting answers from the 22nd of February 2022 until the 22nd of March 2022.

4.3.1 Sampling method

The population of the study is defined as adults, more specifically people aged 15 and above, residing in Austria. As of the 15th of February 2022, there are a total of 8,979,894 people registered as residents in Austria, out of which 7,688,665 are adults aged 15 and above (*Population by Age and Sex*, 2022). Additionally, in order to achieve a more balanced sample, the researcher identifies respondents in their representative federal states. Austria has nine federal states Burgenland; Carinthia; Lower Austria; Upper Austria; Salzburg; Styria; Tyrol; Vorarlberg and Vienna (*Geography and Population*, n.d.).

The first sampling method the researcher uses is convenience sampling. Convenience sampling is a sort of non-probability sampling whereby individuals are selected since they are "convenient" sources of information for the researcher. In probability sampling, every individual in the population has a nonzero but known probability of being chosen using a random selection mechanism. Non-probability sampling does not require known probabilities of selection greater than zero. To determine which components are included in the sample, subjective approaches are used. In non-probability sampling, the population's density may not be representative (Lavrakas, 2008). In the case of this research, the researcher is making use of his own personal network. The network comprises of family members, friends, university professors and members of staff

at MODUL University Vienna, work colleagues, and acquaintances. Furthermore, the participants are encouraged to share the research and questionnaire onto their own personal networks, which is when the snowballing starts.

The researcher uses a random sampling method, a multistage or clustering procedure. This is done as the researcher first identifies the clusters, such as groups and forums, then finds names of individuals within these particular clusters and then samples amongst them. In the case of this research, it involves setting filters on social media to find participatns. More specifically, searching for participants on LinkedIn for instance with the filters set to 'Location - Austria' and then initiating contact with people that show up. Likewise, on Facebook, searching for groups where to post the survey by searching for 'Vienna' and then opening and posting in groups that talk about Vienna. In this particular research, the researcher is making use of three social media channels in total, LinkedIn; Reddit and Facebook. Firstly, the researcher identifies a group and a forum, in this case a federal state in Austria, and makes a post explaining the research and the survey, and inviting random participants, members of these groups and forums, to participate in the research. Additionally, the participants were encouraged to share the post.

Moreover, the researcher makes extensive use of his personal LinkedIn network that, at the time of writing, consists of about 1,600 1st connections, researchers direct connections, of which 317 are located in Austria. Furthermore, the researcher was able to use the connections of his connections, 2nd connections, in order to approach a wider audience. Once approached, the researcher sends them a personal message inviting them to take part in the study. As the researcher is based in Vienna, and out of his 317 connections, 188 or 59.31% are from Vienna, the researcher made use of LinkedIn filters in order to add connections from other Austrian federal states. In the end, a total of 174 individuals participated in the survey.

4.4 Conceptual Framework Reasoning

Regarind TPB, the first group, behavioral beliefs extends to the attitude towards the behaviour group which is theory based. The survey question related to that group is question 30 which is as follows 'I have a positive attitude towards organically produced products.' The second group, normative beliefs extends to the subjective norm group which is based on the proposed production benefit of the Farm to Fork Strategy. Namely, the three related questions for this group are the first three questions under the production benefit section in the survey. The three related questions are as follows, 'Organic farming is complying with specific rules on pesticides, fertilisers and antibiotics', 'Organic farming is making more efficient use of resources' and 'Organic products are produced with higher respect for animal welfare.' The third group, control beliefs extends to the percieved behavioral control which is based on the proposed consumption benefit of the Farm to Fork Strategy. Namely, question 22, which is under the consumption section of the survey, is as follows 'I am aware of EU quality labels and EU organic farming logo.' As

described in more detail in the Methodology section, since it is a statement question and is answered with a use of a Likert scale, from 1 to 5, 1 – "I fully disagree" – 5 "I fully agree", participants that answer with 4, being "I agree", and with 5, being "I fully agree", are able to answer question 23, which is 'I am aware of what the EU quality labels and EU organic farming logo stand for.' Therefore, the actual behavioral control is based on question 23. Meaning that, the researcher holds a strong belief that consumers are purchasing products based on the organic logo and above mentioned organic labels. Furthermore, the third group which is tested to behavior is the intention group. The intention group is based on the distribution benefit of the Farm to Fork strategy. More specifically, questions 11, 12, 13 and 14 are the basis for the intention group. Question 11 is as follows 'Short supply chains are an important factor when I am purchasing my food', question 12 is as follows 'Food is produced in a manner that respects local tradition and 'know-how' is important factor when I am purchasing my food', question 13 is as follows 'Food comes from a known geographical area is important factor when I am purchasing my food' and question 14 is as follows 'I would be willing to purchase seasonal products and not have all ingredients available all the time.' Furthermore, the first group, attitude towards the behavior, and the second group, subjective norm, are linked to the intention group. In the analysis, the relationship between both of the groups to the intention group is tested to determine which relationship is stronger and more reliable for this population sample. Lastly for the Theory of Planned Behavior, the behavior group. The behavior group is based on the proposed consumption benefit and on question 15. Question 15 is a multiple choice question asking participants 'How much money do you spend monthly on organic products?' There are three groups related to the Theory of Planned Behaviour leading to the Behaviour group. Those are, the intention group, the percieved behavioral control group and the actual behavioral control group. Regarding the Social Identification Theory, the relevant group is the personal factors group. Furthermore, it is comprised of five subgroups. Those are the gender subgroup, the age subgroup, the prior Farm to Fork awareness subgroup, the highest completed education subgroup and the location subgroup. Respondents are grouped accordingly and the relationship between each subgroup is analysed in regards to the behavior.

4.5 Data analysis

The data collected is analyzed with the use of the following statistics programs: Microsoft Excel, Miro and PSPP. As mentioned previously, Typeform offers visuals of the data collected for each question therefore that data is discussed in detail descriptively.

Firstly, the descriptive analysis is performed from the full sample of the collected data. This includes the distribution of socio-demographic information such as: age; gender; education level; location; prior Farm to Fork knowledge; perception of the Farm to Fork strategy; attitude towards organically produced products and expressing a desired identity when purchasing organically produced products. Following that, the general results are outlined in regard to the mean scores for each question. The process is then continued with PSPP tests in order to determine if

there is a significant difference between the groups for the hypotheses. This is done in order to accept or reject the hypotheses. Lastly, the conceptual framework and its relationships are tested and outlined.

4.6 Research ethics

Research ethics are at the core of this research, with the researcher enforcing ethical standards through the course of the research. Namely, the participation in the survey is completely voluntary. In order to protect the anonymity of participants, the researcher is not asking for information that can lead to the participant such as names, addresses or any other identifying information. Furthermore, prior to completing the survey, the participants were welcomed with a message outlining the purpose of the research, the voluntary participation and its anonymity. Additionally, the participants were encouraged to withdraw if they deemed the survey to be longer than the predicted 10 minutes or if they felt uncomfortable with any questions. The data collected is kept confidential and not shared with any third party and is strictly used for the purposes of this research. Lastly, the researcher obtained permission from the institutional review board, IRB, to conduct the survey.

5 RESULTS AND DISCUSSION

5.1 Introduction

Through this chapter the results obtained from the online survey are discussed. Initially, the data collected is thoroughly reported through descriptive statistics in order to have a clearer insight into the obtained data sample. Afterwards, the correlations are established in order to validate the hypotheses outlined above.

5.2 Descriptive Statistics

During the data collection process, 174 respondents completed the questionnaire. In total, there were 394 views (i.e. people opening the survey), from which 273 (69.29%), started but did not complete the questionnaire. Therefore, when comparing the number of people that started and the number of people that submitted their answer, the completion rate of the survey which on average took eight minutes and 44 seconds to complete was 63.74%.

5.2.1 Demographics

In the online survey, the personal information section covers general demographic information and attitudes towards organically produced products. Through section 5.2.1 questions from the personal information section of the survey are analyzed. The section analyses the age of respondents, their gender, their educational level, the federal province they are located in, their prior knowledge of the 'Farm to Fork' strategy including the perception of participants that were previously aware, their attitude towards organically produced products and lastly their feeling of expressing their desired identity when purchasing organic products.

5.2.1.1 Age

The 174 respondents are for the purpose of the analysis grouped into two different age groups. Group 1, specified as 'Younger' includes respondents aged 15 to 29 and Group 2, specified as 'Older' includes respondents aged 29 and above. Additionally, there are 112 respondents in the 'Younger' age group and 62 respondents in the 'Older' age group. The average age among the respondents in the sample is 30.2 years. Figure 21 showcases a pie chart which outlines the distribution among the two age groups.

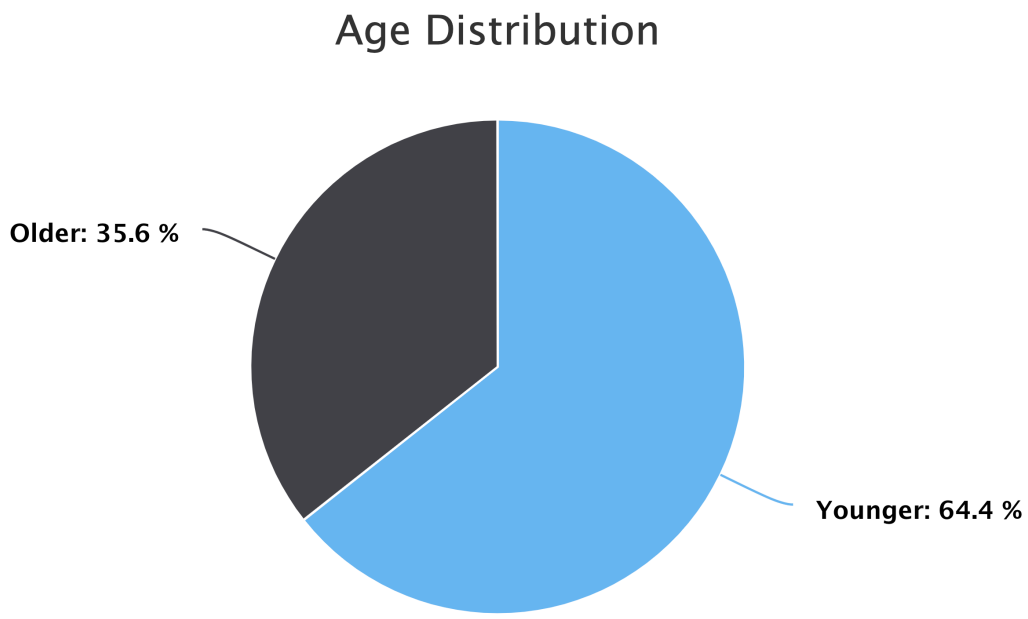

FIGURE 21 - AGE DISTRIBUTION (N= 174)

5.2.1.2 Gender

As outlined in the methodology chapter, participants' are offered three answer choices regarding their gender. Those choices are female, male and diverse. Figure 22 depicts the gender distribution of the sample.

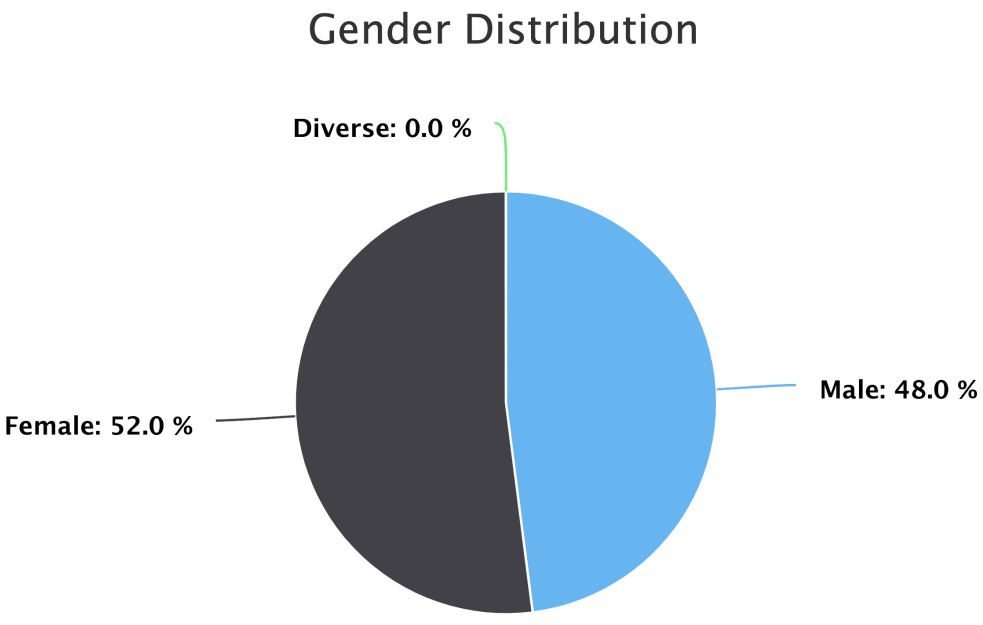

FIGURE 22 - GENDER DISTRIBUTION (N=174)

Out of 174 participants 90 (51.7%), are female and 83 (47.7%) male. Additionally, one participant, or 0.6% of total participants, is diverse. Therefore, the data set shows a balanced gender ratio between female and male respondents. Additionally, due to the male and female groups

being significantly larger than the diverse group, only those two are used in the respective data analysis.

5.2.1.3 Highest completed education

As outlined in the methodology chapter, participants were offered five answer choices regarding their highest completed education. The choices are primary school, high school, bachelor's degree, master's degree and diploma of doctoral studies. Figure 23 showcases the distribution of different levels of the highest completed educational levels in the sample.

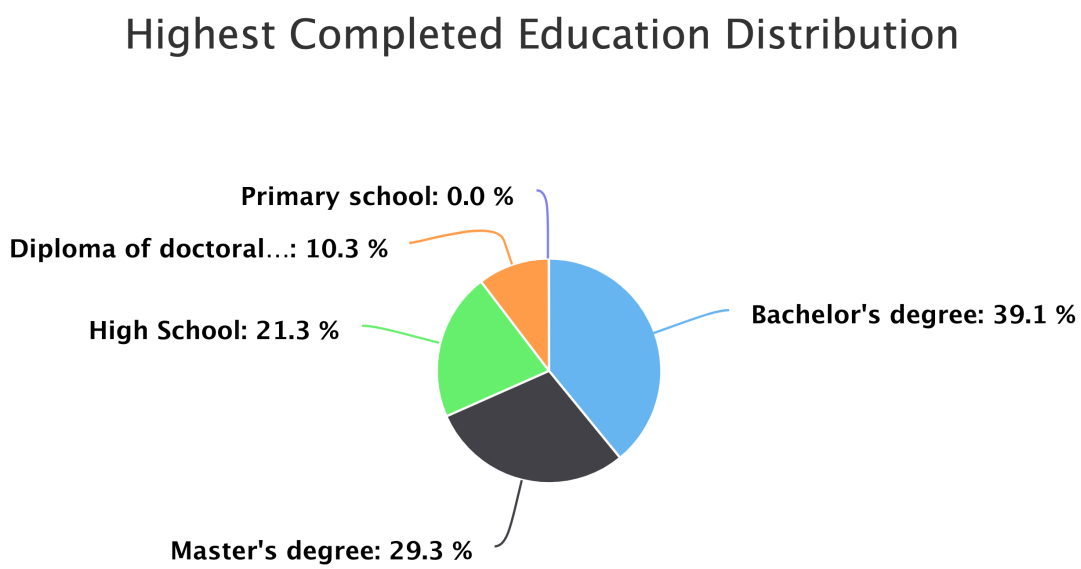

FIGURE 23 - HIGHEST COMPLETED EDUCATION DISTRIBUTION (N=174)

Firstly, out of 174 participants, 68 (39.1%) of total participants, selected Bachelor's degree as their highest completed education. Secondly, 51 (29.3%) participants selected Master's degree as their highest completed education. Thirdly, 37 (21.3%) of total participants, selected High School as their highest completed education. Penultimately, 18 (10.3%) of total respondents, selected Diploma of doctoral studies as their highest completed education. Lastly, no participants selected Primary school as their highest completed education. Additionally, 137 (78.74%) of total participants, selected a form of university education for their highest completed education.

5.2.1.4 Location

As previously outlined in the methodology chapter, the residential location of respondents in the nine federal provinces in Austria is important in order to see regional differences. The nine federal states available for participants to choose are Burgenland, Carinthia, Lower Austria, Upper Austria, Salzburg, Styria, Tyrol, Vorarlberg and Vienna. Figure 24 showcases the distribution of participants in regard to the federal state they are located in.

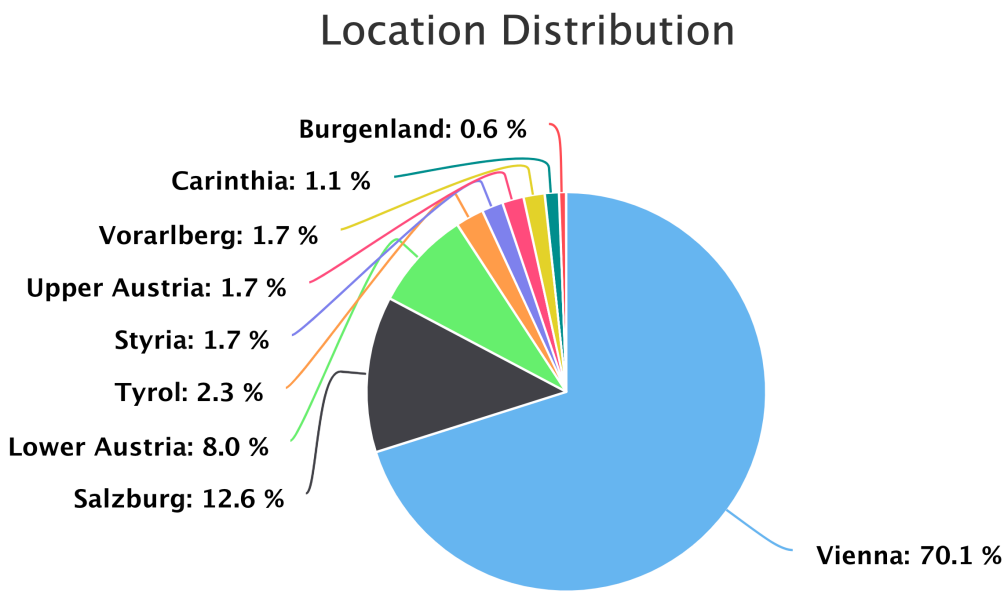

FIGURE 24 - LOCATION DISTRIBUTION (N=174)

Firstly, out of 174 participants, 122 (70.1%), are located in Vienna. Secondly, 22 (12.6%) participants, are located in Salzburg. Thirdly, 14 (8%) participants, are located in Lower Austria. Fourthly, 4 (2.3%) participants, are located in Tyrol. Styria, Upper Austria and Vorarlberg each have 3 (1.7%) respondents located in them. Penultimately, 2 (1.1%) respondents, are located in Carinthia. Lastly, only 1 respondent (0.6%) is located in Burgenland. Additionally, due to the 'Vienna' group being significantly larger than the other location groups, when analyzing the data in regard to participants location, two groups are used, 'Capital based', Vienna, and 'Non-capital based', all other states combined. Furthermore, a significant portion of participants being located in Vienna can be considered a researchers bias due to the researcher being primarily located in Vienna and having most of his personal network, including family and friends, based there.

5.2.1.5 Prior Farm to Fork knowledge

With the aim of the research to understand the consumer perception of proposed food production and consumption benefits brought by the Farm to Fork strategy in Austria, participants are asked to indicate their awareness of the strategy prior to the survey. As mentioned in the Methodology chapter, it is a single choice question leaving the participants to answer either 'Yes' or 'No.' Additionally, participants that choose 'Yes' are given a subquestion unlike participants that choose 'No.' The subquestion is analyzed in more detail in subsection 5.2.1.5.1. Figure 25 showcases the Farm to Fork awareness prior to the survey participation.

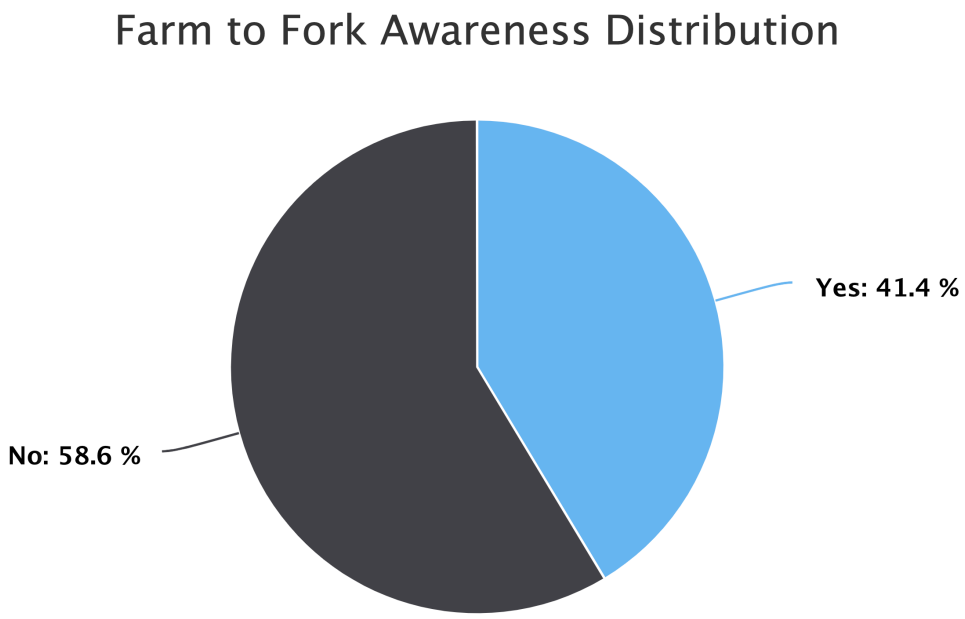

FIGURE 25 - FARM TO FORK AWARENESS DISTRIBUTION (N=174)

Out of 174 participants, 102 (58.6%), were not aware of the Farm to Fork strategy prior to completing the survey. On the other hand, 72 (41.4%) total participants, are aware of the Farm to Fork strategy.

5.2.1.5.1 Perception of the Farm to Fork

In order to better understand consumer perception of the Farm to Fork strategy, participants that have had knowledge of the strategy prior to the survey were asked to indicate their perception. The question is as follows 'What is your perception of the Farm to Fork strategy?' As mentioned in the Methodology chapter, participants are asked to indicate whether they agree or disagree with the use of a Likert scale from 1 to 5, 1 – "I fully disagree" – 5 "I fully agree". Figure 26 showcases answers from 72 respondents.

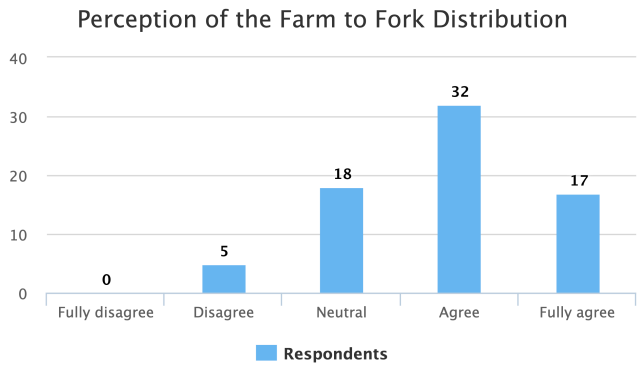

FIGURE 26 - PERCEPTION OF THE FARM TO FORK DISTRIBUTION (N=72)

Out of 72 participants, 32 (44.4%) agree with the strategy. Additionally, 17 (23.6%) particiaptns indicated that they fully agree with the strategy. A total of 18 (25%) participants, are neutral

towards the strategy. And only 5 (6.9%) participants indicated that they disagree with the strategy. Not a single participant indicated to fully disagree with the strategy. Lastly, the mean value of 3.85 shows average agreement with the strategy.

5.2.1.6 Attitude towards organically produced products

In order to determine the participants' attitude towards organically produced products which is related to the assumptions of the theory of planned behavior, participants are asked to indicate if they have a positive attitude towards organically produced products and are asked to assess it on a Likert scale from 1 to 5, 1 – "I fully disagree" – 5 "I fully agree". Figure 27 showcases the answers of all 174 respondents.

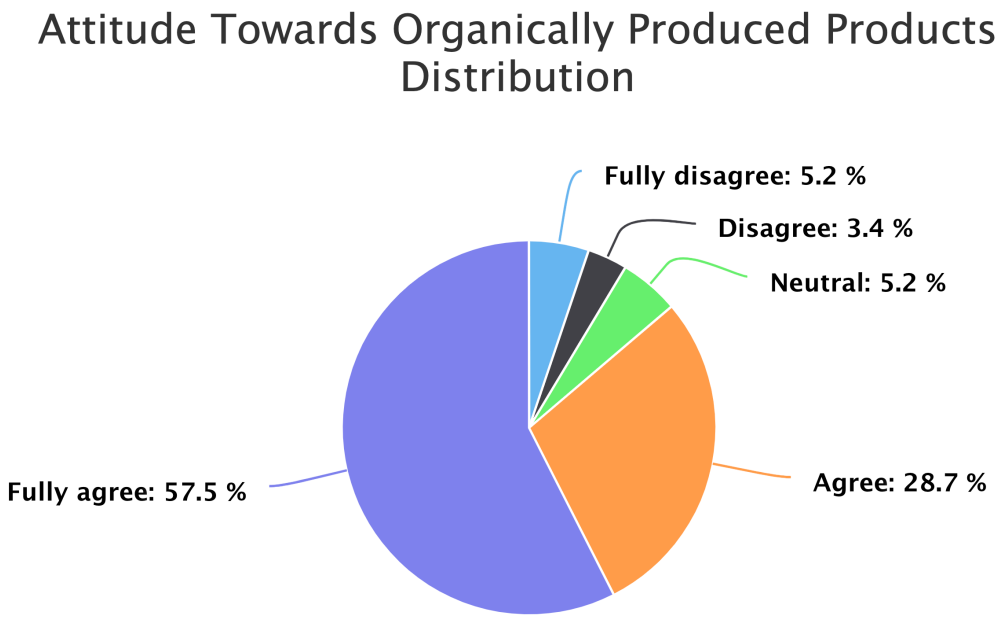

FIGURE 27 - ATTITUDE TOWARDS ORGANICALLY PRODUCED PRODUCTS DISTRIBUTION (N=174)

Out of 174 participants, 100 (57.5%) indicated that they fully agree and that they have a positive attitude towards organically produced products. Similarly, 50 (28.7%) participants, indicated that they agree with having a positive attitude towards organically produced products. A total of 9 (5.2%) particiapants is neutral towards organically produced products. Similarly, 9 (5.2%) particiapnts indicated that they fully disagree in having a positive attitude towards organically produced products. Similarly, 6 (3.4%) respondents, indicated that they disagree in having a positive attitude towards organically produced products. The mean value is calculated with 4.30.

5.2.1.7 Expressing a desired identity when purchasing organic products

In order to determine whether participants believe that they are expressing their desired identity when purchasing organic products, participants are given a statement saying "I believe that when purchasing organic products, I am expressing my desired identity." Participants are then

asked to indicate with the use of a Likert scale from 1 to 5, 1 – "I fully disagree" – 5 "I fully agree", their opinion towards the statement. Figure 28 showcases the answers from 174 respondents.

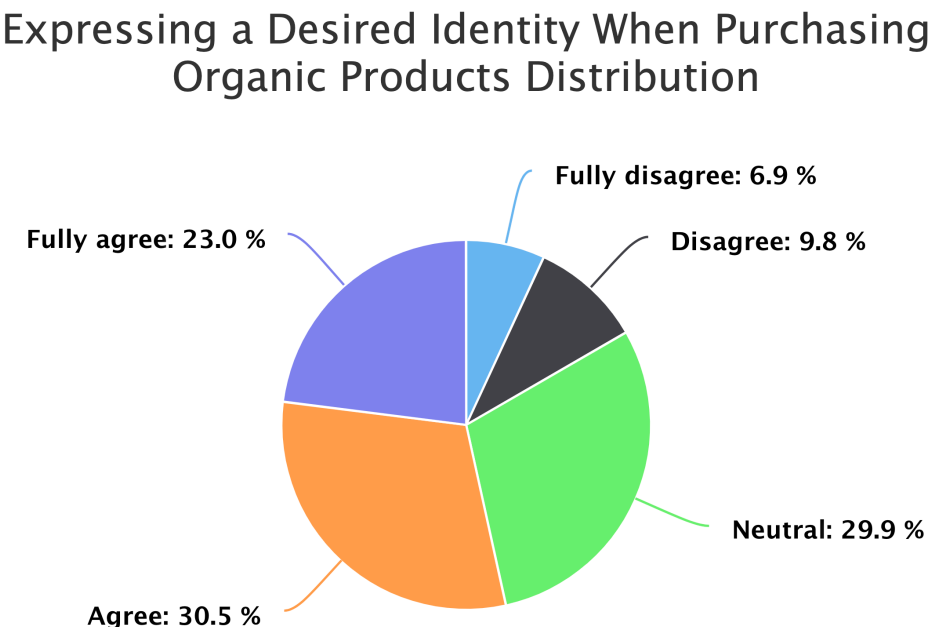

FIGURE 28 - EXPRESSING A DESIRED IDENTITY WHEN PURCHASING ORGANIC PRODUCTS DISTRIBUTION (N=174)

Out of 174 participants, 40 (23%), indicated that they fully agree with the statement. Additionally, a total of 53 (30.5%) particiapnts, indicated that they agree with the statement. A total of 52 (29.9%) participants, is neutral regarding the statement. Furthermore, 17 (9.8%) participants, disagrees with the statement. Similarly, 12 (6.9%) particiapnts, indicated that they fully disagree with the statement that when they are purchasing organic products, they are expressing their desired identity. is the 3.53.

5.3 General Results

This section briefly discussed the overall responses and their mean scores.

Firstly, from looking at Table 3, we see the subsection 'Sustainable food production.' Generally, respondents tended to agree or fully agree with the statements, since only two questions have a mean score of under 3.5.

Sustainable food production	
1. Organic farming is complying with specific rules on pesticides, fertilisers and antibiotics.	4,03
2. Organic farming is making more efficient use of resources.	3,33
3. Organic products are produced with higher respect for animal welfare.	3,86
4. Agriculture has already made a major contribution in fighting climate change.	2,59
5. Agriculture is one of the major causes of climate change.	3,52
6. Encouraging conventional farmers to turn into organics is an important priority.	3,95
7. Strengthening the farmer's position in the food supply chain is an important priority.	4,26
8. I am in favour of the European Union continuing to provide subsidy payments to farmers who carry out agricultural practices beneficial to the climate and the environment.	4,25
9. Income support for organic farmers should increase over the next ten years.	4,12
Sustainable food processing & distribution	
1. Short supply chains are an important factor when I am purchasing my food.	3,66
2. Food is produced in a manner that respects local tradition and 'know-how' is important factor when I am purchasing my food.	3,58
3. Food comes from a known geographical area is important factor when I am purchasing my food.	3,71
4. I would be willing to purchase seasonal products and not have all ingredients available all the time.	4,07
Sustainable food consumption	
1. It is important to me that food bears a label that guarantees quality.	3,93
2. I am aware of EU quality labels and EU organic farming logo.	3,52
3. I am aware of what the EU quality labels and EU organic farming logo stand for.	3,83
Personal information	
1. Perception of the Farm to Fork strategy.	3,85
2. I have a positive attitude towards organically produced products.	4,30
3. I believe that when purchasing organic products, I am expressing my desired identity.	3,53

TABLE 3 - GENERAL RESULTS MEAN SCORES

The two questions are statement questions 'Organic farming is making more efficient use of resources' and 'Agriculture has already made a major contribution in fighting climate change',

having a mean score of 3.33 and 2.59. The two questions with the highest mean score, 4.26 and 4.25, are 'Strengthening the farmer's position in the food supply chain is an important priority' and 'I am in favor of the European Union continuing to provide subsidy payments to farmers who carry out agricultural practices beneficial to climate and the environment.

Secondly, now focusing on the second subsection 'Sustainable food processing & distribution.' Similarly, to the first subgroup, respondents tended to agree or fully agree with the statements. The lowest mean score for that subgroup, being 3.58, is for the question 'Food is produced in a matter that respects local tradition and 'know-how' is important factor when I am purchasing my food.' On the other hand, the question with the highest mean score, being 4.07, is 'I would be willing to purchase seasonal products and not have all ingredients available all the time.'

Thirdly, now looking at the third subgroup 'Sustainable food consumption.' The question 'It is important to me that food bears a label that guarantees quality' has a mean rank of 3.93. Additionally, the following question presented the respondents with the current, at the time of writing, labels and logos 'I am aware of the EU quality labels and EU organic farming logo' has a mean rank of 3.52. Furthermore, participants that selected 'I Agree' and 'I Fully Agree', in total 103 respondents, have answered the question 'I am aware of what the EU quality labels and EU organic farming logo stand for' with the mean score of 3.83.

Lastly, focusing on the last subgroup 'Personal Information.' Participants that were aware of the Farm to Fork strategy prior to completing the survey, in total 72 respondents, answered the the question 'What is your perception of the Farm to Fork strategy?' with a mean score of 3.85. Additionally, the question based on the Theory of Planned Behavior 'I have a positive attitude towards organically produced products' has a mean score of 4.3. Furthermore, the question based on the Social Identification theory 'I believe that when purchasing organic products, I am expressing my desired identity' has a mean score of 3.53.

Figure 29 corresponds to the question 'Which of the following do you think is a consequence of organic farming?' As outlined in the methodology chapter, participants were given eight answer options to this multiple choice question. From looking at the figure, we can see that the most frequently selected consequence of organic farming is 'Prohibited and restricted use of pesticides and fertilizers' with 132 (75.9%) respondents sharing that opinion. The second most selected consequence is 'A non-toxic environment' with 115 (66.1%) respondents. Furthermore, statements like 'Protection of the environment and the climate', 'The long-term fertility of the soil', 'Having high animal welfare standards and enhancing animal welfare' and 'Reducing climate and environmental footprint' show similar results. The two least selected consequences among participants are 'Being beneficial to pollinators' and 'Enhancing genetic biodiversity and increasing yields' with 54 (31%) and 52 (29.9%) respondents selecting them.

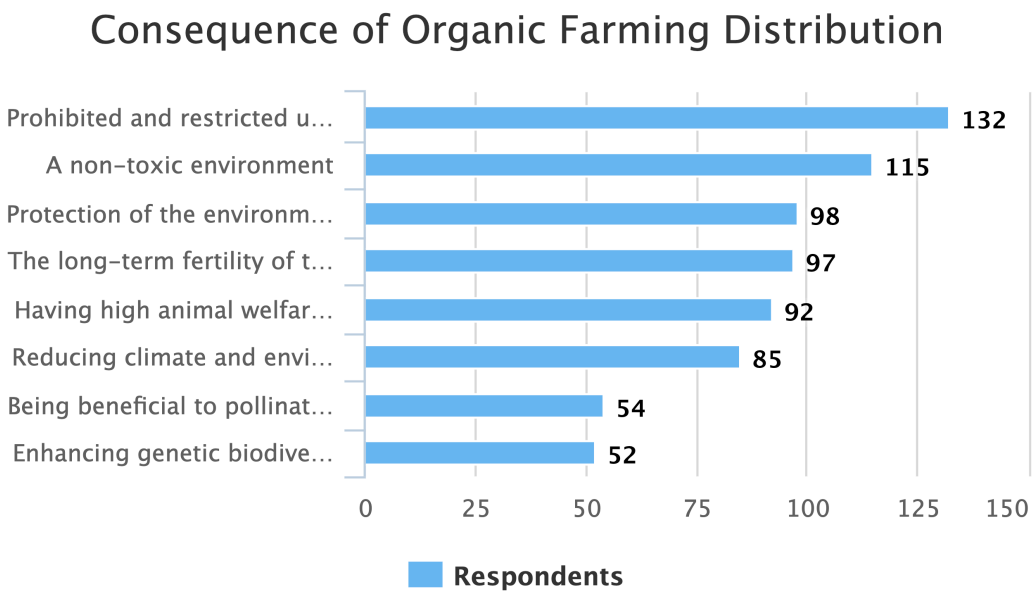

FIGURE 29 - CONSEQUENCE OF ORGANIC FARMING DISTRIBUTION (N=174)

Figure 30 corresponds to the question 'How much more are you willing to pay for agricultural products that are produced in a way that limits their carbon footprint?' From looking at the figure we can see that 'Up to 20% more' is the is the preferred category of respondents, with a total of 55 (31.6%) respondents selecting it. Furthermore, we can see that 'Up to 10% more' and 'Up to 40% more' have both been selected by 34 (19.5%) respondents. Additionally, we can see that 14 participants selected 'Up to 60% more', 6 participants selected 'Up to 100% more', 'Up to 85% more' and 'More than a 100% more' have been selected by 3 participants each. Lastly, we can see that there are 25 (14.4%) respondents are not willing to pay more for agricultural products that are produced in a way that limits their carbon footprint.

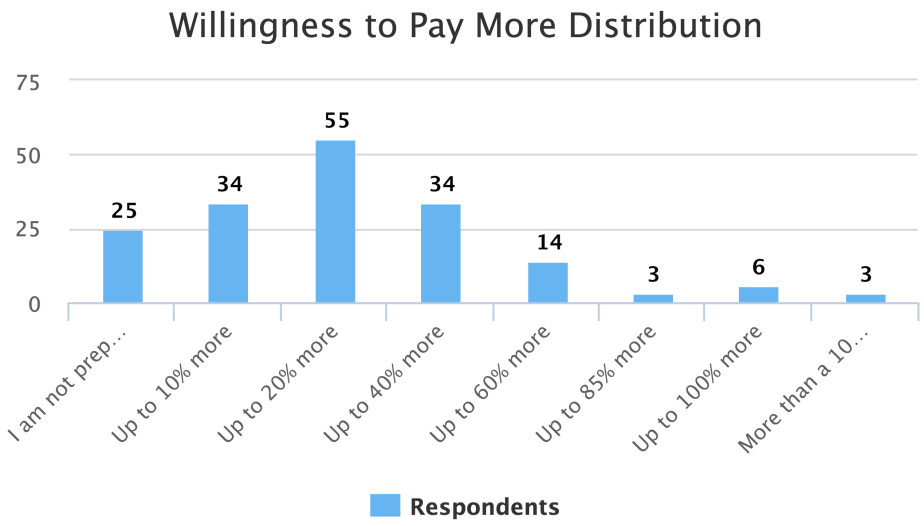

FIGURE 30 - WILLINGNESS TO PAY MORE DISTRIBUTION (N=174)

Figure 31 corresponds to the question 'Where do you do your shopping?' As outlined in the methodology chapter, this is a multiple choice question. From looking at the figure we can see that the most popular shopping location among respondents are the supermarkets with 164 (94.3%) respondents doing their shopping there. Furthermore, 73 (42%) particiapnts do their shopping at the farmers market and that 40 (23%) particiapnts prefer shopping in mini markets. Lastly, a total of 22 (12.6%) particiapnts make use of the delivery when doing their shopping.

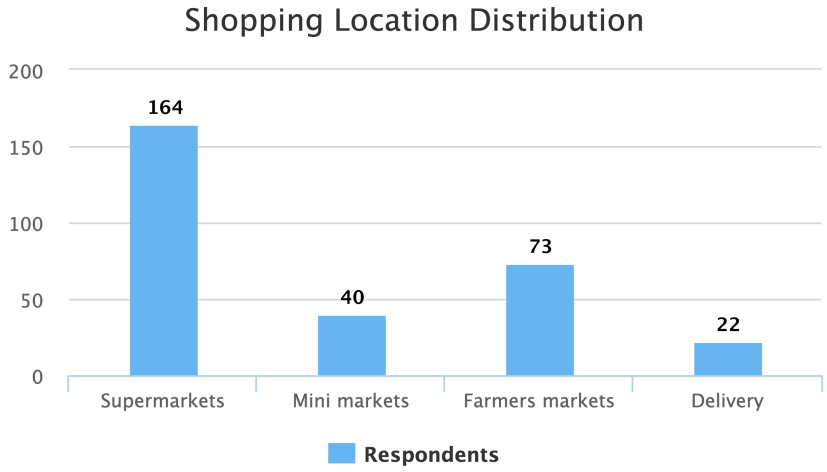

FIGURE 31 - SHOPPING LOCATION DISTRIBUTION (N=174)

Figure 32 relates to the multiple-choice question 'From where do you obtain information on food risk?' By looking at the figure we can see that respondents mostly obtain information on food risk from television. A total of 105 (60.3%) respondents do obtain information from television on food risk. Additionally, 70 respondents obtain information on food risk from supermarkets, 40 from local grocers, 37 from farmers and lastly, 17 obtain information on food risk from restaurants.

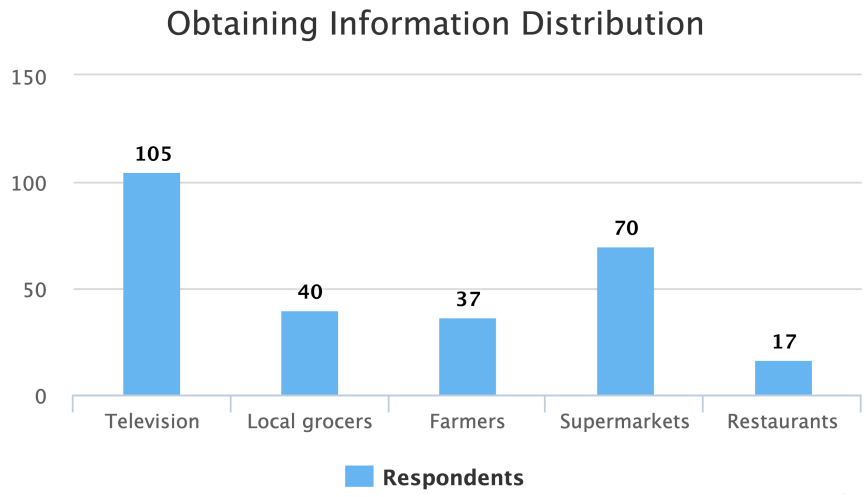

FIGURE 32 - OBTAINING INFORMATION DISTRIBUTION (N=174)

5.4 Hypotheses testing

5.4.1 Hypothesis 1

As outlined in the hypothesis development section, hypothesis 1 is as follows:

H0: There is no significant difference between male and female consumers residing in Austria that have a positive attitude towards organically produced products.

H1: There is a significant difference between male and female consumers residing in Austria that have a positive attitude towards organically produced products.

Firstly, a histogram for each group is created in order to see if there is a normal distribution. Since we are testing between two independent groups, this is done in order to determine which test to run, if it is a parametric distribution, a t-test, and if it is non-parametric distribution, a Mann-Whitney U-Test. Regarding the population sample, the male group consists of 83 respondents while the female group consists of 90 respondents. Due to its insignificant size, of one respondent, the diverse group is not tested. Additionally, we are using the answers from question 30 in the survey, which is a theory related question, which is as follows 'I have a positive attitude towards organically produced products.'

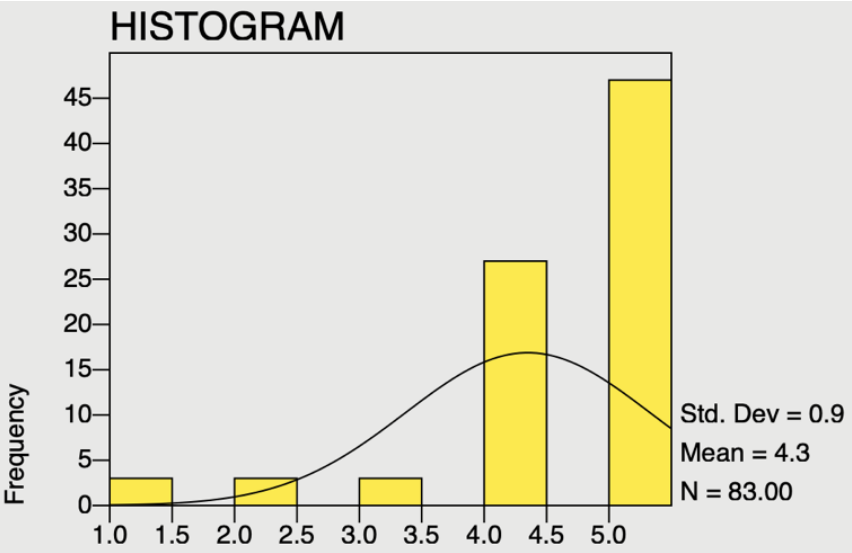

FIGURE 33 - HYPOTHESIS 1 MALE DISTRIBUTION (N=83)

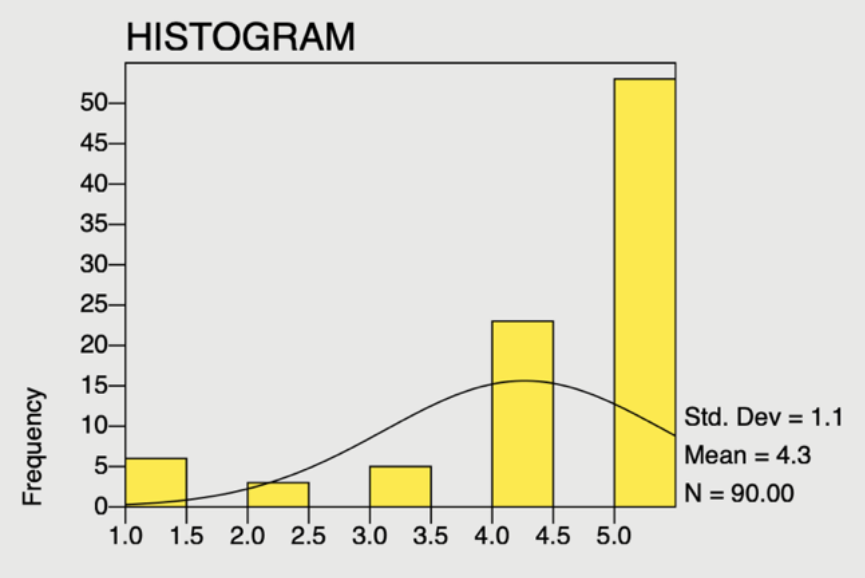

FIGURE 34 - HYPOTHESIS 1 FEMALE DISTRIBUTION (N=90)

From looking at the two histograms, Figure 33 and Figure 34, we can see that neither the female nor the male histograms look normally distributed. Additionally, we can see that the mean score is the same, at 4.3, and that the female group has a slightly higher standard deviation from the male group, 1.1 compared to 0.9. The mean values thus far indicate no group having a more positive attitude towards organically produced products. Visually, the two figures, 33 and 34, are implying that a parametric t-test should not be ran. However, because we might distrust our optical impression, we do as if the chart would support the normal assumption and proceed with the Kolmogorov-Smirnov test.

One-Sample Kolmogorov-Smirnov Test

		VAR001
N		83
Normal Parameters	Mean	4.35
	Std. Deviation	.98
Most Extreme Differences	Absolute	.31
	Positive	.25
	Negative	-.31
Kolmogorov-Smirnov Z		2.85
Asymp. Sig. (2-tailed)		.000

FIGURE 35 - HYPOTHESIS 1 ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST MALE (N=83)

One-Sample Kolmogorov-Smirnov Test

		VAR002
N		90
Normal Parameters	Mean	4.27
	Std. Deviation	1.15
Most Extreme Differences	Absolute	.33
	Positive	.26
	Negative	-.33
Kolmogorov-Smirnov Z		3.10
Asymp. Sig. (2-tailed)		.000

FIGURE 36 - HYPOTHESIS 1 ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST FEMALE (N=90)

Looking at Figure 35 and 36, we can see that both p-values are significant, both being .000. Therefore, we run a Mann-Whitney U-Test in order to determine if there is a significant difference between male and female consumers residing in Austria that have a positive attitude towards organically produced products. In this case, the mean value for the male group is 4.35 and for the female group 4.27, indicating that the male group has a more positive attitude towards organically produced products. Additionally, the standard deviations remain higher for the female group, being 1.15, compared to the male group, being .98.

Ranks

	N			Mean Rank		Sum of Ranks	
	1	2	Total	1	2	1	2
VAR003	83.00	90.00	173.00	87.87	86.20	7293.00	7758.00

Test Statistics

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
VAR003	3663.00	7758.00	-.25	.805

FIGURE 37 - HYPOTHESIS 1 MANN-WHITNEY U-TEST (N=173)

Looking at Figure 37, we can see that there is no significant difference since the p-value is greater than 0.05, in this case 0.805. Therefore, we accept H0 and reject H1 meaning that there is no

significant difference between male and female consumers residing in Austria that have a positive attitude towards organically produced products. Furthermore, the male group shows a mean rank of 87.87 (7293/83) and the female group has a mean rank of 86.20 (7758/90). Meaning that, male residents in Austria have a slightly more positive attitude towards organically produced products than female residents. Additionally, that can only be concluded for the population sample obtained for this research. Therefore, it cannot be generalized that male residents in Austria have a more positive attitude towards organically produced products than female residents in Austria due to the insignificant population sample to make the judgement.

5.4.2 Hypothesis 2

As outlined in the hypothesis development section, hypothesis 2 is outlined as follows:

H0: There is no significant difference between male and female consumers residing in Austria that believe they are expressing their desired identities when purchasing organic products.

H1: There is a significant difference between male and female consumers residing in Austria that believe they are expressing their desired identities when purchasing organic products.

Firstly, a histogram for each group is created in order to see if there is a normal distribution. Similarly, when analyzing the first hypothesis, since we are testing between two independent groups, this is done in order to determine which test to run, if it is a parametric distribution, a t-test, and if it is non-parametric distribution, a Mann-Whitney U-Test. Regarding the population sample, the male group consists of 83 respondents while the female group consists of 90 respondents. Due to its insignificant size, of one respondent, the diverse group is not tested. Additionally, we are using the answers from question 31 in the survey, which is a theory related question, which is as follows 'I believe that when purchasing organic products, I am expressing my desired identity.'

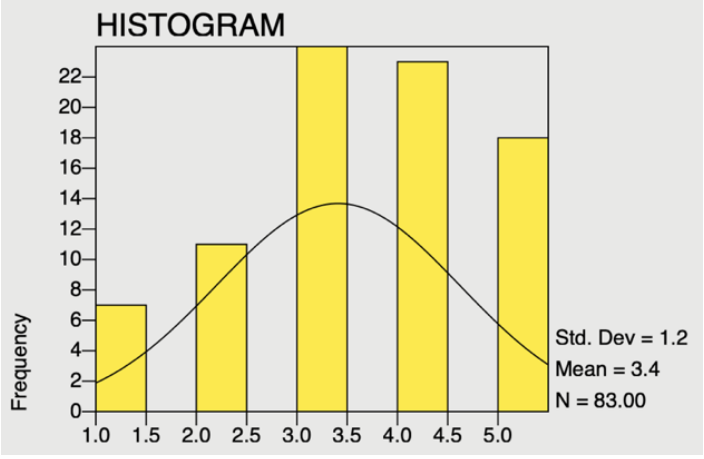

FIGURE 38 - HYPOTHESIS 2 MALE DISTRIBUTION (N=83)

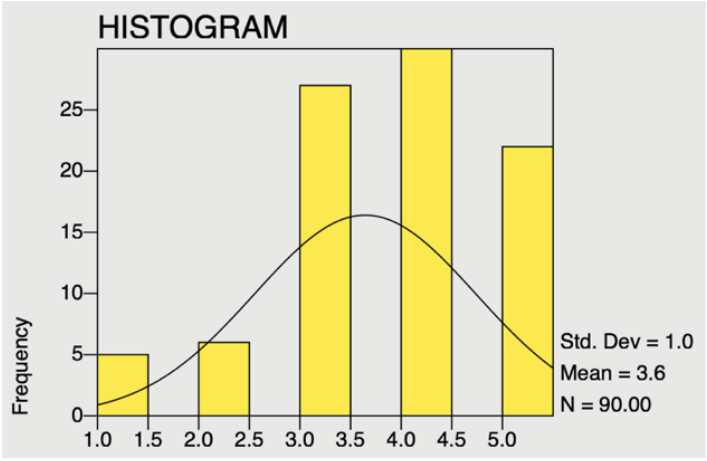

FIGURE 39 - HYPOTHESIS 2 FEMALE DISTRIBUTION (N=90)

From looking at the two histograms, Figure 38 and Figure 39, unlike with the Hypothesis 1, we can see that the histogram for the male group seems normally distributed, but the histogram for the female group does not. Furthermore, the mean rank for the female group is slightly higher, at 3.6, than the mean rank for the male group, at 3.4. The higher mean rank for the female group is indicating that the female group believes they are expressing their desired identities more when purchasing organic products than the male group. On the other hand, the standard deviation for the male group is higher, at 1.2, compared to the female group, at 1.0. Although the histogram for the male group is implying that a t-test should be ran, we run a Kolmogorov-Smirnov test first in order to determine that.

One-Sample Kolmogorov-Smirnov Test

		VAR001
N		83
Normal Parameters	Mean	3.41
	Std. Deviation	1.21
Most Extreme Differences	Absolute	.18
	Positive	.14
	Negative	-.18
Kolmogorov-Smirnov Z		1.65
Asymp. Sig. (2-tailed)		.005

FIGURE 40 - HYPOTHESIS 2 ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST MALE (N=83)

One-Sample Kolmogorov-Smirnov Test

		VAR002
N		90
Normal Parameters	Mean	3.64
	Std. Deviation	1.09
Most Extreme Differences	Absolute	.21
	Positive	.14
	Negative	-.21
Kolmogorov-Smirnov Z		1.95
Asymp. Sig. (2-tailed)		.001

FIGURE 41 - HYPOTHESIS 2 ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST FEMALE (N=90)

Looking at Figure 40 and 41, we can see that both p-values are significant, for the male group being 0.05 and for the female group being 0.01. Therefore, we run a Mann-Whitney U-Test in order to determine if there is a significant difference between male and female consumers residing in Austria that believe they are expressing their desired identities when purchasing organic products. Looking at the mean values, the female group still has a greater mean value, 3.64, compared to the male group, 3.41, still indicating that the female group indicates that they are expressing their desired identities more when purchasing organic products than the male group.

Ranks

	N			Mean Rank		Sum of Ranks	
	1	2	Total	1	2	1	2
VAR003	83.00	90.00	173.00	82.17	91.45	6820.50	8230.50

Test Statistics

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
VAR003	3334.50	6820.50	-1.26	.207

FIGURE 42 - HYPOTHESIS 2 MANN-WHITNEY U-TEST (N=173)

Looking at Figure 42, we can see that there is no significant difference since the p-value is greater than 0.05, in this case 0.207. Therefore, we accept H0 and reject H1 meaning that there is no significant difference between male and female consumers residing in Austria that believe they are expressing their desired identities when purchasing organic products. Furthermore, male group has a mean rank of 82.17 (6820.50/83) and the female group has a mean rank of 91.45 (8230.50/90). Similarly, to Hypothesis 1, due to the insignificant sample size this judgement cannot be made for all male and female residents in Austria, just for this obtained population sample. Therefore, it can be concluded that for this population sample, there is no trend and the female residents in Austria believe they are expressing their desired identities more when purchasing organic products than the male residents.

5.4.3 Hypothesis 3

As outlined in the hypothesis development section, hypothesis 3 is outlined as follows:

H0: There is no significant difference between age groups of consumers residing in Austria prepared to pay at least 10% more for agricultural goods produced by carbon reducing processes.

H1: There is a significant difference between age groups of consumers residing in Austria prepared to pay at least 10% more for agricultural goods produced by carbon reducing processes.

Firstly, a histogram for each group is created in order to see if there is a normal distribution. Similarly when analyzing the first and second hypothesis, since we are testing between two independent groups, this is done in order to determine which test to run, if it is a parametric distribution, a t-test, and if it is non-parametric distribution, a Mann-Whitney U-Test. Regarding the population sample, the younger age group consists of 112 respondents while the older age group consists of 62 respondents. Additionally, we are using the answers from question 16 in the survey 'How much more are you willing to pay for agricultural products that are produced in a way that limits their carbon footprint?' As outlined in the Methodology section, participants had eight answers to choose from: not prepared to pay more; up to 10% more; up to 20% more; up to 40% more; up to 60% more; up to 85% more; up to a 100% more; and more than a 100%. Due to analysis purposes, these answer choices are recoded: not prepared to pay more being '1'; up to 10% more being '2'; up to 20% more being '3'; up to 40% more being '4'; up to 60% more being '5'; up to 85% more being '6'; up to a 100% more being '7'; and more than a 100% being '8'.

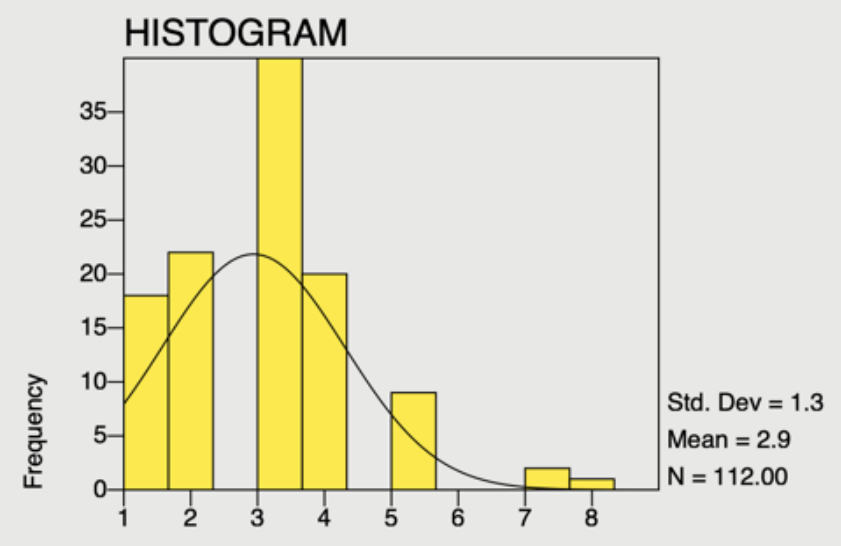

FIGURE 43 - HYPOTHESIS 3 YOUNGER AGE GROUP DISTRIBUTION (N=112)

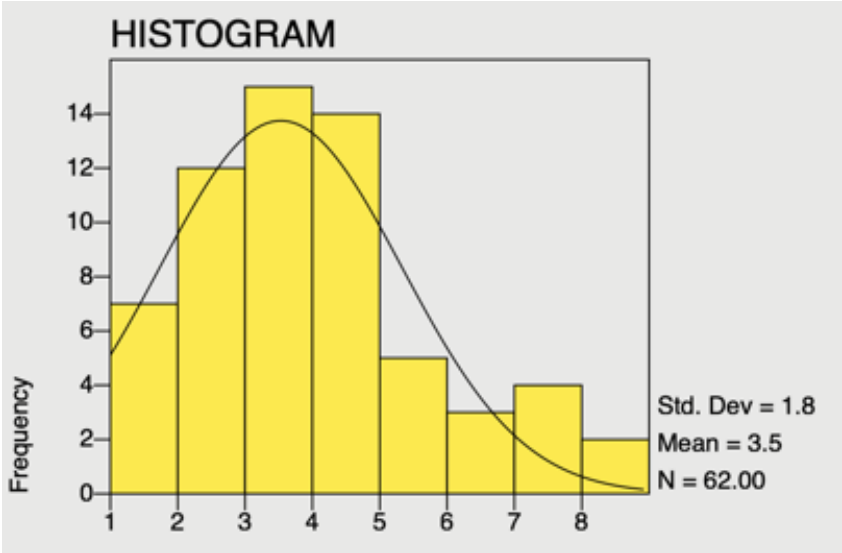

FIGURE 44 - HYPOTHESIS 3 OLDER AGE GROUP DISTRIBUTION (N=62)

From looking at the two histograms, Figure 43 and Figure 43, similarly to Hypothesis 1, we can see that neither the female nor the male histograms look normally distributed. Additionally, we can see that the mean score for the older age group is significantly higher compared to the younger age group, 3.5 compared to 2.9. Therefore, the mean values thus far indicate that the older age group is prepared to pay at least 10% more for agricultural products that are produced in a way that limits their carbon footprint. Similarly, to the previous two hypothesis, visually the two figures, 43 and 44, are implying that a parametric t-test should not be ran. However, because we might distrust our optical impression, we do as if the chart would support the normal assumption and proceed with the Kolmogorov-Smirnov test.

One-Sample Kolmogorov-Smirnov Test

		VAR002
N		112
Normal Parameters	Mean	2.94
	Std. Deviation	1.36
Most Extreme Differences	Absolute	.20
	Positive	.20
	Negative	-.16
Kolmogorov-Smirnov Z		2.07
Asymp. Sig. (2-tailed)		.000

FIGURE 45 - HYPOTHESIS 3 ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST YOUGER AGE GROUP (N=112)

One-Sample Kolmogorov-Smirnov Test

		VAR003
N		62
Normal Parameters	Mean	3.53
	Std. Deviation	1.80
Most Extreme Differences	Absolute	.17
	Positive	.17
	Negative	-.08
Kolmogorov-Smirnov Z		1.35
Asymp. Sig. (2-tailed)		.038

FIGURE 46 - HYPOTHESIS 3 ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST OLDER AGE GROUP (N=62)

Looking at Figure 45 and 46, we can see that both p-values are significant, for the younger age group being 0.000 and for the female group being 0.038. Therefore, we run a Mann-Whitney U-Test in order to determine if there is a significant difference between age groups of consumers residing in Austria prepared to pay at least 10% more for agricultural goods produced by carbon reducing processes. Looking at the mean values, the older age group still has a greater mean value, 3.53, compared to the younger age group, 2.94, still indicating that the older age group is prepared to pay at least 10% more for agricultural products that are produced in a way that limits their carbon footprint than the younger age group.

Ranks

	N			Mean Rank		Sum of Ranks	
	1	2	Total	1	2	1	2
VAR002	112.00	62.00	174.00	82.04	97.36	9188.50	6036.50

Test Statistics

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
VAR002	2860.50	9188.50	-1.97	.049

FIGURE 47 - HYPOTHESIS 3 MANN-WHITNEY U-TEST (N=174)

Looking at Figure 47, we can see that there is a significant difference since the p-value is lesser than 0.05, in this case 0.049. Therefore, we accept H1 and reject H0 meaning that there is a significant difference between age groups of consumers residing in Austria prepared to pay at least 10% more for agricultural goods produced by carbon reducing processes. Furthermore, younger age group has a mean rank of 82.04 (9188.50/112) and the female group has a mean rank of 97.36 (6036.50/62). Correspondingly to Hypothesis 1 and 2, due to the insignificant sample size this judgement cannot be made for all younger and older residents in Austria, just for this obtained population sample. Therefore, it can be concluded that for this population sample, there is no trend and the older residents in Austria are prepared to pay at least 10% more for agricultural products that are produced in a way that limits their carbon footprint than the younger residents in Austria.

5.4.4 Hypothesis 4

As outlined in the hypothesis development section, hypothesis 4 is as follows:

H0: There is no significant difference, based on educational attainment, between consumers residing in Austria who perceive that agriculture has already made a major contribution in fighting climate change.

H1: There is a significant difference, based on educational attainment, between consumers residing in Austria who perceive that agriculture has already made a major contribution in fighting climate change.

Firstly, a histogram for each of the four groups is created in order to see if there is a normal distribution. Since we are testing between four independent groups, this is done in order to determine which test to run, if it is a parametric distribution, we run an ANOVA test**,** and if it is non-parametric distribution, a Kruskal-Wallis H test. Regarding the population sample, the Bachelor's group consists of 68 respondents the Master's group consists of 51 respondents, the High School group consists of 37 respondents, and lastly the Diploma of Doctoral studies group consist of 18 respondents. Additionally, we are using the answers from question 4 in the survey, which is as follows 'Agriculture has already made a major contribution in fighting climate change.'

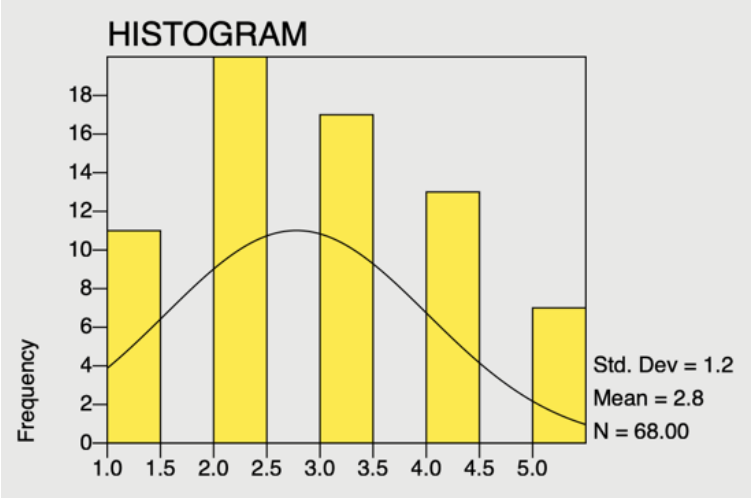

FIGURE 48 - HYPOTHESIS 4 BACHELOR'S HISTOGRAM DISTRIBUTION (N=68)

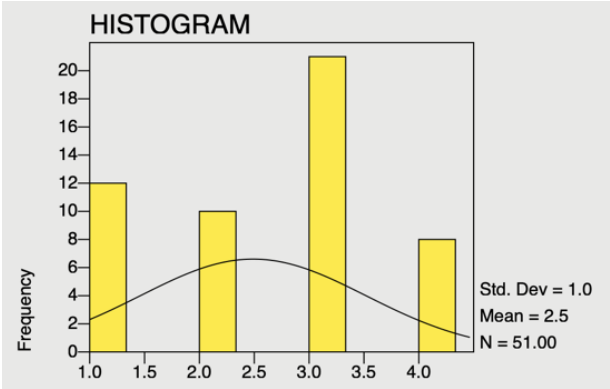

FIGURE 49 - HYPOTHESIS 4 MASTER'S HISTOGRAM DISTRIBUTION (N=51)

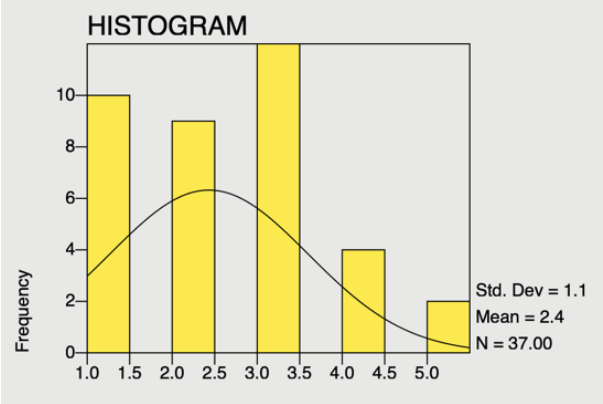

FIGURE 50 - HYPOTHESIS 4 HIGH SCHOOL HISTOGRAM DISTRIBUTION (N=37)

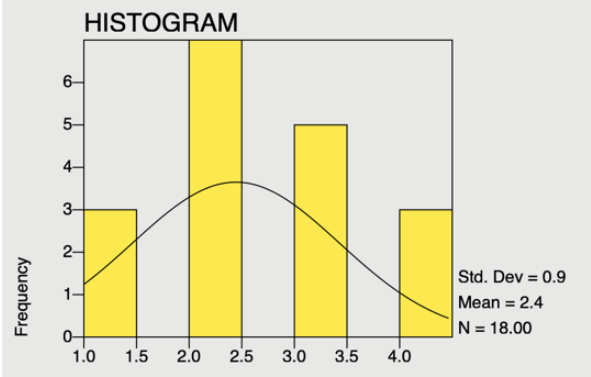

FIGURE 51 - HYPOTHESIS 4 DIPLOMA OF DOCTORAL STUDIES HISTOGRAM DISTRIBUTION (N=18)

From looking at the four histograms, Figure 48, 49, 50 and Figure 51 we can see that none of the histograms look normally distributed. Additionally, we can see that the mean score for the bachelor's group is higher compared to the other groups, at 2.8 compared to 2.5 for master's and 2.4 for both high school and diploma of doctoral studies groups. Therefore, the mean values thus far indicate that the bachelor's group perceives that agriculture has already made a major contribution in fighting climate change more in comparison to the other three groups. Similarly, to the previous hypothesis, visually the four figures, 48, 49, 50 and 51, are implying that a ANOVA

test should not be ran. However, because we might distrust our optical impression, we do as if the chart would support the normal assumption and proceed with the Kolmogorov-Smirnov test.

One-Sample Kolmogorov-Smirnov Test

		VAR001	VAR002	VAR003	VAR004
N		68	51	37	18
Normal Parameters	Mean	2.78	2.49	2.43	2.44
	Std. Deviation	1.23	1.03	1.17	.98
Most Extreme Differences	Absolute	.19	.26	.17	.23
	Positive	.19	.16	.16	.23
	Negative	-.13	-.26	-.17	-.16
Kolmogorov-Smirnov Z		1.59	1.85	1.05	.98
Asymp. Sig. (2-tailed)		.008	.001	.207	.297

FIGURE 52 - HYPOTHESIS 4 ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST ALL GROUPS (N=174)

Looking at Figure 52, we can see that two p-values are significant and that two p-values are not significant. The two groups that show a significant p-value are the Bachelor's and Master's groups. On the other hand, the two groups that show a p-value that is not significant are the High School and Diploma of Doctoral studies groups. Therefore, we run a Kruskal-Wallis H test in order to determine if there is a significant difference, based on educational attainment, between consumers residing in Austria who perceive that agriculture has already made a major contribution in fighting climate change. Looking at the mean values, the Bachelor's group still has a greater mean value, 2.78, compared to the other three groups. The Master's group has a mean value of 2.49, the High School group a mean value of 2.43 and the Diploma of Doctoral studies group a mean value of 2.44. Therefore, still indicating that that the Bachelor's group perceives that agriculture has already made a major contribution in fighting climate change more in comparison to the other three groups.

Ranks

	VAR002	N	Mean Rank
VAR001	1	68	94.46
	2	51	85.08
	3	37	80.72
	4	18	82.03
	Total	174	

Test Statistics

	VAR001
Chi-Square	2.45
df	3
Asymp. Sig.	.484

FIGURE 53 – HYPOTHESIS 4 KRUSKAL-WALLIS H TEST (N=174)

From looking at Figure 53, we can see that the p-value is .484 meaning that there is no significant difference, based on educational attainment, between consumers residing in Austria who perceive that agriculture has already made a major contribution in fighting climate change**.** Additionally, in regards to the mean scores, we can see that the Bachelor's group now has an even more significant difference over the other three groups. The mean rank for the Bachelor's group

is 94.46, which is followed by the Master's group with 85.05, which is closely followed by the Diploma of Doctoral studies group at 82.03, and lastly the High School group with 80.72. As was the case with previous hypotheses, due to the sample size we cannot conclude that generally the residents in Austria that have a Bachelor's degree as their high completed education will have a higher mean rank compared to the other groups, in this case residents with a Master's degree, High School degree and Diploma of Doctoral studies, as their highest completed education. However, we can conclude that for this population sample that is the case. Additionally, another observation is that residents in Austria that have a university education as their highest completed education perceive that agriculture has already made a major contribution in fighting climate change in comparison to the residents in Austria that do not have a university education.

5.4.5 Hypothesis 5

As outlined in the hypothesis development section, hypothesis 5 is as follows:

H0: There is no significant difference of prior Farm to Fork awareness between consumers residing in Austria that perceive agriculture as one of the major causes of climate change.

H1: There is a significant difference of prior Farm to Fork awareness between consumers residing in Austria that perceive agriculture as one of the major causes of climate change.

Firstly, a histogram for each group is created in order to see if there is a normal distribution. Like so far, since we are testing between two independent groups, this is done in order to determine which test to run, if it is a parametric distribution, a t-test, and if it is non-parametric distribution, a Mann-Whitney U-Test. Regarding the population sample, the aware group consists of 72 respondents while the unaware group consists of 102 respondents. Additionally, we are using the answers from question 5 in the survey, which is a theory related question, which is as follows 'Agriculture is one of the major causes of climate change.'

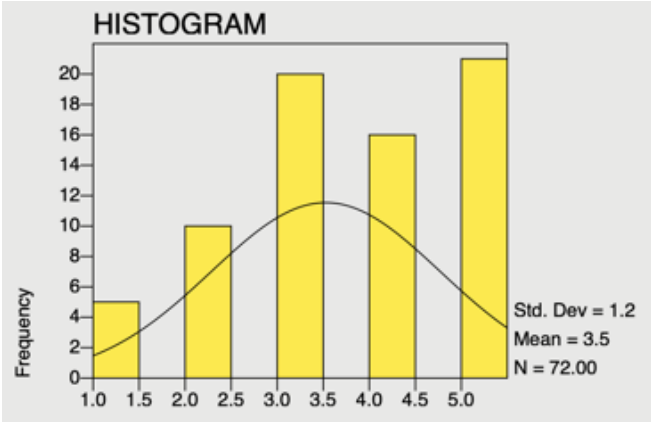

FIGURE 54 - HYPOTHESIS 5 AWARE GROUP DISTRIBUTION (N=72)

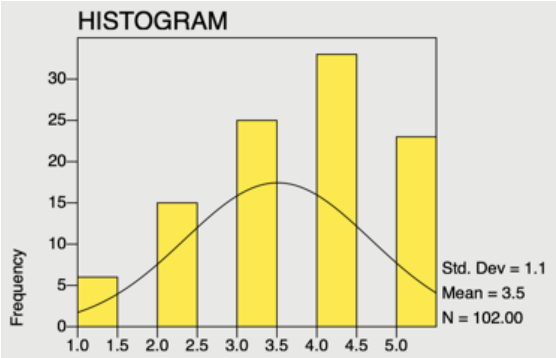

FIGURE 55 - HYPOTHESIS 5 UNAWARE GROUP DISTRIBUTION (N=102)

From looking at the two histograms, Figure 54 and Figure 55, similarly to Hypothesis 1 and Hypothesis 3, we can see that neither the aware group nor the unaware group histograms look normally distributed. Additionally, we can see that the mean score is the same, at 3.5, and that the aware group has a slightly higher standard deviation from the unaware group, 1.2 compared to 1.1. Therefore, the mean values thus far indicate that there is no difference between Austrian consumers that were aware of the Farm to Fork strategy prior to completing the survey and those that were not that they do not perceive that agriculture is one of the major causes of climate change. Similarly, to the previous hypothesis, visually the two figures, 54 and 55, are implying that a parametric t-test should not be ran. However, because we might distrust our optical impression, we do as if the chart would support the normal assumption and proceed with the Kolmogorov-Smirnov test.

One-Sample Kolmogorov-Smirnov Test

		VAR002
N		72
Normal Parameters	Mean	3.53
	Std. Deviation	1.24
Most Extreme Differences	Absolute	.17
	Positive	.15
	Negative	-.17
Kolmogorov-Smirnov Z		1.47
Asymp. Sig. (2-tailed)		.018

FIGURE 56 - HYPOTHESIS 5 ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST AWARE GROUP (N=72)

One-Sample Kolmogorov-Smirnov Test

		VAR002
N		102
Normal Parameters	Mean	3.51
	Std. Deviation	1.17
Most Extreme Differences	Absolute	.21
	Positive	.12
	Negative	-.21
Kolmogorov-Smirnov Z		2.14
Asymp. Sig. (2-tailed)		.000

FIGURE 57 - HYPOTHESIS 5 ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST UNAWARE GROUP (N=102)

Looking at Figure 56 and 57, we can see that both p-values are significant, for the aware group being 0.018 and for the unaware group being 0.000. Therefore, we run a Mann-Whitney U-Test

in order to determine if there is a significant difference of prior Farm to Fork awareness between consumers residing in Austria that perceive agriculture as one of the major causes of climate change. Looking at the mean values, the aware group now has a slightly greater mean value, 3.53, compared to the unaware group, 3.51, still indicating that the aware age perceives that agriculture is one of the major causes of climate change than the unaware group.

Ranks

	N			Mean Rank		Sum of Ranks	
	1	2	Total	1	2	1	2
VAR002	102.00	72.00	174.00	87.02	88.17	8876.50	6348.50

Test Statistics

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
VAR002	3623.50	8876.50	-.15	.879

FIGURE 58 - HYPOTHESIS 5 MANN-WHITNEY U-TEST (N=174)

Looking at Figure 58, we can see that there is no significant difference since the p-value is greater than 0.05, in this case 0.879. Therefore, we accept H0 and reject H1 meaning that there is no significant difference between Austrian consumers that were aware of the Farm to Fork strategy prior to completing the survey and those that were not that they do not perceive that agriculture is one of the major causes of climate change. Furthermore, aware group has a mean rank of 87.02 (8876.50/102) and the unaware group has a mean rank of 88.17 (6348.50/72). Meaning that, residents in Austria that were unaware of the Farm to Fork strategy prior to completing the survey do not perceive that agriculture is one of the major causes of climate change more strongly than the ones that were aware. As was the case previously, this can only be concluded for this population sample and not for all the residents in Austria.

5.4.6 Hypothesis 6

As outlined in the hypothesis development section, hypothesis 6 is as follows:

H0: There is no significant difference between consumers residing in Austria that do and do not find television as an important source of information that conveys strengthening the farmer's position in the supply chain.

H1: There is a significant difference between consumers residing in Austria that do and do not find television as an important source of information that conveys strengthening the farmer's position in the supply chain.

Firstly, a histogram for each group is created in order to see if there is a normal distribution. Like so far, since we are testing between two independent groups, this is done in order to determine which test to run, if it is a parametric distribution, a t-test, and if it is non-parametric distribution, a Mann-Whitney U-Test. Regarding the population sample, the television group consists of 105

respondents while the non-television group consists of 69 respondents. Additionally, we are using the answers from question 8 in the survey, which is a theory related question, which is as follows 'Strengthening the farmer's position in the food supply chain is an important priority.'

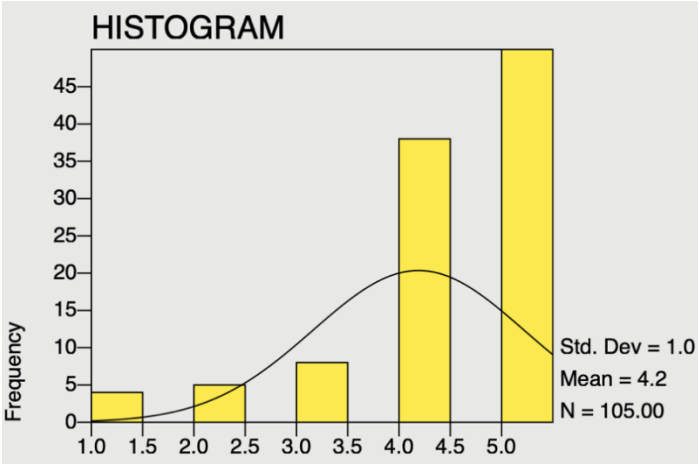

FIGURE 59 - HYPOTHESIS 6 TELEVISION GROUP DISTRIBUTION (N=105)

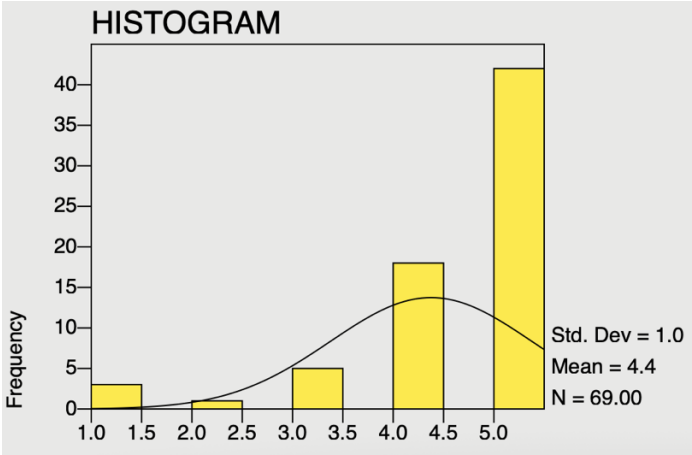

FIGURE 60 - HYPOTHESIS 6 NON-TELEVISION GROUP DISTRIBUTION (N=69)

From looking at the two histograms, Figure 59 and Figure 60, similarly to Hypothesis 1, Hypothesis 3 and Hypothesis 5, we can see that neither the television group nor the non-television group histograms look normally distributed. Additionally we can see that the mean score is slightly higher for the non-television group than the television group, being 4.4 compared to 4.2. Additionally, we can see that the standard deviation is the same, at 1.0. Therefore, the mean values thus far indicate that participants that find television an important source of information about food risk believe less that strengthening the farmer's position in the supply chain is an important priority than the participants that do not find television an important source of information. Similarly to the previous hypothesis, visually the two figures, 59 and 60, are implying that a parametric t-test should not be ran. However, because we might distrust our optical impression, we do as if the chart would support the normal assumption and proceed with the Kolmogorov-Smirnov test.

One-Sample Kolmogorov-Smirnov Test

		VAR001
N		105
Normal Parameters	Mean	4.19
	Std. Deviation	1.03
Most Extreme Differences	Absolute	.26
	Positive	.22
	Negative	-.26
Kolmogorov-Smirnov Z		2.71
Asymp. Sig. (2-tailed)		.000

FIGURE 61 - HYPOTHESIS 6 ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST TELEVISION GROUP (N=105)

One-Sample Kolmogorov-Smirnov Test

		VAR001
N		69
Normal Parameters	Mean	4.38
	Std. Deviation	1.00
Most Extreme Differences	Absolute	.34
	Positive	.27
	Negative	-.34
Kolmogorov-Smirnov Z		2.84
Asymp. Sig. (2-tailed)		.000

FIGURE 62 - HYPOTHESIS 6 ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST NON-TELEVISION GROUP (N=69)

Looking at Figure 61 and 62, we can see that both p-values are significant and the same, being .000 Therefore, we run a Mann-Whitney U-Test in order to determine if there is a significant difference between consumers residing in Austria that do and do not find television as an important source of information that conveys strengthening the farmer's position in the supply chain. Looking at the mean values, the television group has a slightly lesser mean value, 4.19, compared to the non-television group, 4.38, still indicating that participants that find television an important source of information about food risk believe less that strengthening the farmer's position in the supply chain is an important priority than the participants that do not find television an important source of information.

Ranks

	N			Mean Rank		Sum of Ranks	
	1	2	Total	1	2	1	2
VAR001	105.00	69.00	174.00	83.09	94.21	8724.50	6500.50

Test Statistics

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
VAR001	3159.50	8724.50	-1.57	.115

FIGURE 63 - HYPOTHESIS 6 MANN-WHITNEY U-TEST (N=174)

Looking at Figure 63, we can see that there is no significant difference since the p-value is greater than 0.05, in this case 0.115. Therefore, we accept H0 and reject H1 meaning that there is no significant difference between consumers residing in Austria that do and do not find television

as an important source of information that conveys strengthening the farmer's position in the supply chain. Furthermore, television group has a mean rank of 83.09 (8724.50/105) and the non-television group has a mean rank of 94.21 (6500.50/69). Meaning that, residents in Austria that find television an important source of information about food risk believe less that strengthening the farmer's position in the supply chain is an important priority than the participants that do not find television an important source of information. As was the case previously, this can only be concluded for this population sample and not for all the residents in Austria.

5.4.7 Conceptual Framework Relationships

In order to analyze the framework accordingly, the behavior group's answer choices are recoded in order to be suitable for PSPP. Namely, '0-25€' is now '1', '26-50€' is now '2', '51-75€' is now '3', '76-100€' is now '4', '101-150€' is now '5' and 'More than 150€' is now '6.' Additionally, out of the total 174 respondents, 20 respondents chose the first option, 25 chose the second option, 35 chose the third option, 34 chose the fourth option, 25 chose the fifth option and 35 chose the sixth and last answer option. Figure 64 showcases monthly spending on organic products with the use of a pie chart.

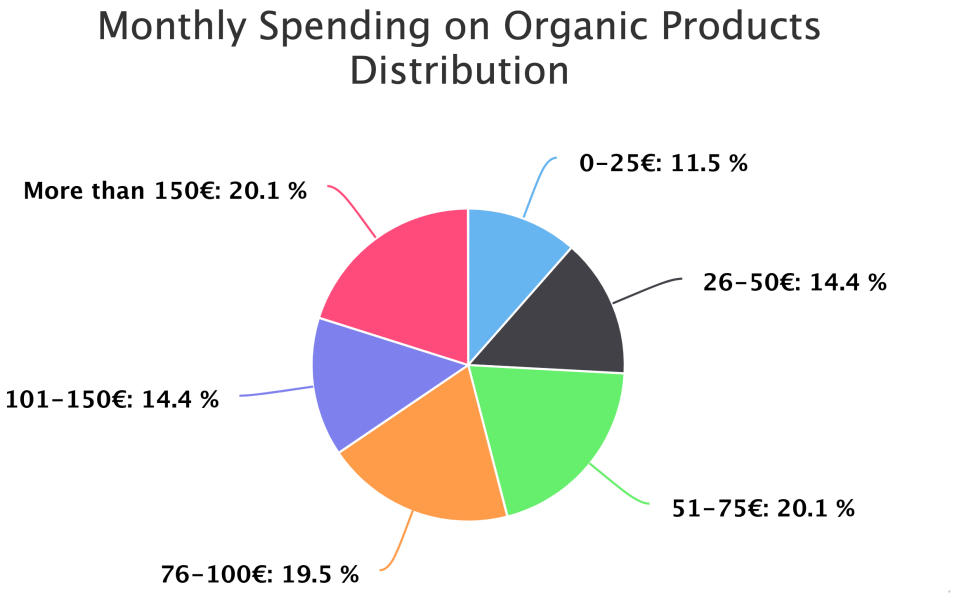

FIGURE 64 -MONTHLY SPENDING ON ORGANIC PRODCUTS DISTRIBUTION (N=174)

5.4.7.1 Theory of Planned Behavior

Figure 65 showcases the relationships of the Theory of Planned Behavior which are analyzed in more detail in this section.

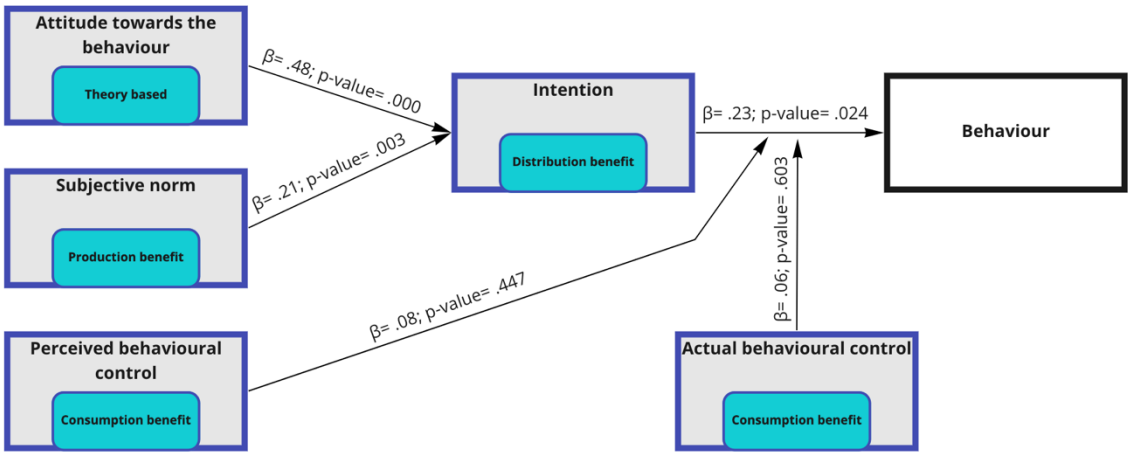

FIGURE 65 - THEORY OF PLANNED BEHAVIOUR RELATIONSHIPS

5.4.7.1.1 Intention

In order to determine how strong is the correlation between Attitude and Subjective Norm towards Intention, a multiple linear regression test is conducted in PSPP. Attitude corresponds to the theory-based question 'I have a positive attitude towards organically produced products' and Subjective Norm is a group of questions. Those questions are: 'Organic farming is complying with specific rules on pesticides, fertilizers and antibiotics'; 'Organic farming is making more efficient use of resources' and 'Organic products are produced with higher respect for animal welfare.' Additionally, Intention is also a group of questions. Those questions are: 'Short supply chains are an important factor when I am purchasing my food'; 'Food is produced in a manner that respects local tradition and 'know-how' is important factor when I am purchasing my food'; 'Food comes from a known geographical area is important factor when I am purchasing my food' and 'I would be willing to purchase seasonal products and not have all ingredients available all the time.' Firstly, the test is conducted with Attitude and Subjective Norm, the variables being grouped together. The output can be seen **in** Figure 66. Secondly, the test is conducted with all variables ungrouped to see which ones have and do not have the highest correlation to Intention. The output can be seen in Figure 67.

Model Summary (Intention)

R	R Square	Adjusted R Square	Std. Error of the Estimate
,60	,36	,36	3,08

ANOVA (Intention)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	924,34	2	462,17	48,71	,000
Residual	1622,61	171	9,49		
Total	2546,95	173			

Coefficients (Intention)

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	4,19	1,17	,00	3,57	,000
Attitude	1,71	,25	,48	6,92	,000
SubjectiveNorm	,31	,10	,21	3,00	,003

FIGURE 66 - THEORY OF PLANNED BEHAVIOR INTENTION MULTIPLE LINEAR REGRESSION

The p-values for both independent variables Attitude and Subjective Norm are lower than 0.05, and therefore can be used to predict the dependent variable Intention. From looking at Figure 64 we can see that Attitude and Subjective Norm explain 36% of the variance in intention, with R Square being .36 which is not high. Additionally, we can see that the Standardized Beta Coefficient is .48 for the Attitude and .21 for the Subjective Norm meaning that meaning that both have a positive influence on intention. In this particular case, we can see that Attitude has a more positive impact on intention compared to Subjective Norm. In order to determine which specific statement has the biggest effect on Intention, a multiple linear regression test is run with each statement. The analysis indicates two significant and two not significant variables. The two significant ones corresponding to questions 'I have a positive attitude towards organically produced products' (Attitude) and 'Organic farming is making more efficient use of resources' (EfficientUse). Additionally, the two not significant corresponding to questions 'Organic farming is complying with specific rules on pesticides, fertilizers and antibiotics' (Complying) and 'Organic products are produced with higher respect for animal welfare' (BetterProduction). Furthermore, the two non-significant show the biggest impact on Intention, with 'I have a positive attitude towards organically produced products' (β= .48) and 'Organic farming is making more efficient use of resources' (β= .14). On the other hand, the two significant variables still show a positive impact on Intention, a lesser one compared to the non-significant variables. To be more specific, 'Organic farming is complying with specific rules on pesticides, fertilizers and antibiotics' (β= .12)

and 'Organic products are produced with higher respect for animal welfare' (β= .02). Figure 67 showcases the results of the multiple linear regression with each statement.

Model Summary (Intention)

R	R Square	Adjusted R Square	Std. Error of the Estimate
,61	,37	,35	3,09

ANOVA (Intention)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	935,61	4	233,90	24,53	,000
Residual	1611,34	169	9,53		
Total	2546,95	173			

Coefficients (Intention)

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	3,99	1,23	,00	3,25	,001
Attitude	1,71	,25	,48	6,92	,000
Complying	,47	,26	,12	1,80	,073
EfficientUse	,43	,22	,14	2,00	,048
BetterProduction	,08	,24	,02	,34	,737

FIGURE 67 - THEORY OF PLANNED BEHAVIOUR INTENTION MULTIPLE LINEAR REGRESSION ALL VARIABLES

5.4.7.1.2 Behavior

In this case, Intention is the same group of questions as in 5.4.7.1.1. Perceived Behavioural Control (PBC) corresponds to the question 'I am aware of EU quality labels and EU organic farming logo' and Actual Behavioral Control (ABC) corresponds to the follow-up question 'I am aware of what the EU quality labels, and EU organic farming logo stand for.' Firstly, the test is conducted with Intention, PBC and ABC, the variables being grouped together. The output can be seen in Figure 68. Secondly, the test is conducted with all variables ungrouped to see which ones have and do not have the highest correlation to Intention. The output can be seen in Figure 69.

Model Summary (Behaviour)

R	R Square	Adjusted R Square	Std. Error of the Estimate
,28	,08	,05	1,45

ANOVA (Behaviour)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	17,72	3	5,91	2,81	,044
Residual	208,38	99	2,10		
Total	226,10	102			

Coefficients (Behaviour)

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	,70	1,42	,00	,50	,620
EULabelKnowledge	,09	,17	,06	,52	,603
EULabelAwareness	,24	,31	,08	,76	,447
Intention	,11	,05	,23	2,29	,024

FIGURE 68 - THEORY OF PLANNED BEHAVIOR MULTIPLE LINEAR REGRESSION

The p-values for Intention is lower than 0.05, 0.24 to be precise, and therefore can be used to predict the dependent variable Behaviour. On the other hand, the PBC and ABC are both higher than 0.05, .603 and .447 to be exact. Additioanlly, from looking at Figure 66 we can see that Intention, PBC and ABC explain only 8% of the variance in Behaviour, with R Square being .08. Furthermore, we can see that all three independent variables have a positive influence on Behaviour, Intention (β= .23), PBC (β= .08) and ABC (β= .06). In order to determine which specific statement has the biggest effect on Behaviour, a multiple linear regression test is run with each statement. The analysis indicates that all independent variables are significant, with all of them being higher than 0.05. The variables 'Short supply chains are an important factor when I am purchasing my food' and 'Food comes from a known geographical area is important factor when I am purchasing my food' have the largest impact (β= .15), followed by variables 'I would be willing to purchase seasonal products and not have all ingredients available all the time' (β= - .09), and 'I am aware of EU quality labels and EU organic farming logo' (β= .09). Furthermore, variables 'Food is produced in a manner that respects local tradition and 'know-how' is important factor when I am purchasing my food' (β= .08) and 'I am aware of what the EU quality labels and EU organic farming logo stand for' (β= .05) have the lowest impact on Behaviour. Figure 69 showcases the results of the multiple linear regression with each statement.

Model Summary (Behaviour)

R	R Square	Adjusted R Square	Std. Error of the Estimate
,32	,10	,05	1,45

ANOVA (Behaviour)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	23,27	6	3,88	1,84	,100
Residual	202,83	96	2,11		
Total	226,10	102			

Coefficients (Behaviour)

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	,87	1,43	,00	,61	,544
ShortSupply	,22	,17	,15	1,27	,208
LocalTradition	,11	,17	,08	,67	,506
GeographicalArea	,22	,17	,15	1,24	,217
Seasonal	-,14	,17	-,09	-,86	,391
EULabelKnowledge	,07	,17	,05	,42	,677
EULabelAwareness	,27	,31	,09	,86	,390

FIGURE 69 - THEORY OF PLANNED BEHAVIOR MULTIPLE LINEAR REGRESSION ALL VARIABLES

5.4.7.2 Social Identification Theory

Figure 70 showcases the relationships of the Theory of Planned Behaviour which are analyzed in more detail in this section.

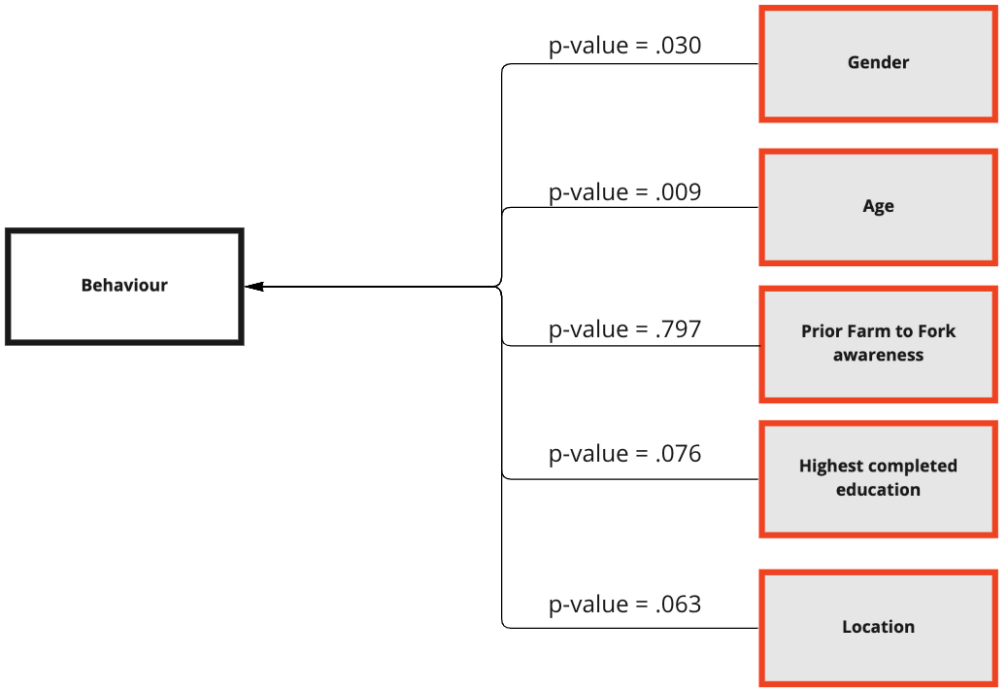

FIGURE 70 - SOCIAL IDENTIFICATION THEORY RELATIONSHIPS

5.4.7.2.1 Gender to Behavior

Firstly, a histogram for each group is created in order to see if there is a normal distribution. Like so far, since we are testing between two independent groups. Regarding the population sample, the male group consists of 83 respondents while the female group consists of 90 respondents. Due to its insignificant size, of one respondent, the diverse group is not tested.

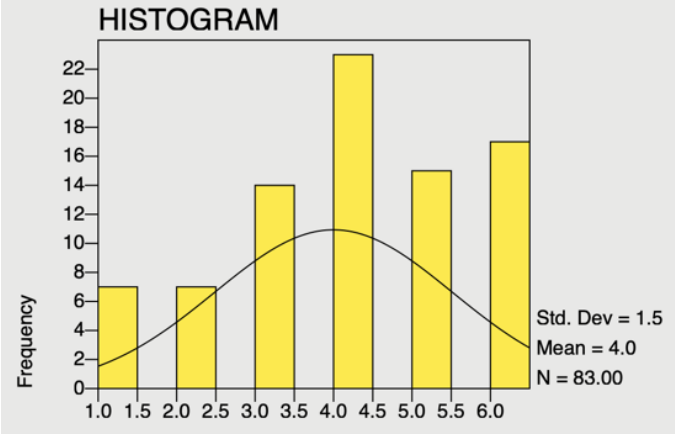

FIGURE 71 - SOCIAL IDENTIFICATION THEORY GENDER TO BEHAVIOUR MALE HISTOGRAM DISTRIBUTION (N=83)

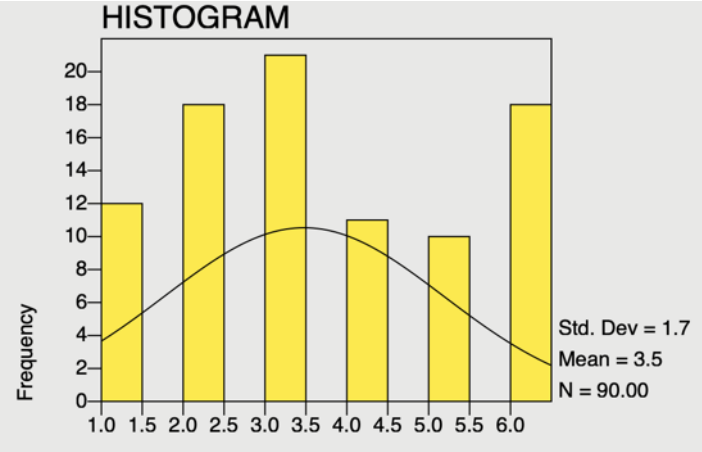

FIGURE 72 - SOCIAL IDENTIFICATION THEORY GENDER TO BEHAVIOUR FEMALE HISTOGRAM DISTRIBUTION (N=90)

From looking at the two histograms, Figure 71 and Figure 72, neither the male group nor the female group histograms look normally distributed. Additionally, we can see that the mean score is slightly higher for the male group than the female group, being 4.0 compared to 3.5. Additionally, we can see that the standard deviation is lower for the male group compared to the female group, at 1.5 compared to 1.7. Therefore, the mean values thus far indicate that male residents in Austria spend more monthly compared to female residents in Austria. Visually the two figures, 71 and 72, are implying that a parametric t-test should not be ran. However, because we might distrust our optical impression, we do as if the chart would support the normal assumption and proceed with the Kolmogorov-Smirnov test.

One-Sample Kolmogorov-Smirnov Test

		VAR001
N		83
Normal Parameters	Mean	4.00
	Std. Deviation	1.51
Most Extreme Differences	Absolute	.16
	Positive	.11
	Negative	-.16
Kolmogorov-Smirnov Z		1.48
Asymp. Sig. (2-tailed)		.017

FIGURE 73 - SOCIAL IDENTIFICATION THEORY GENDER TO BEHAVIOUR MALE ONE-SAMPLE KOLMOGOROV-SMIRNOV (N=83)

One-Sample Kolmogorov-Smirnov Test

		VAR001
N		90
Normal Parameters	Mean	3.48
	Std. Deviation	1.70
Most Extreme Differences	Absolute	.18
	Positive	.18
	Negative	-.13
Kolmogorov-Smirnov Z		1.68
Asymp. Sig. (2-tailed)		.004

FIGURE 74 - SOCIAL IDENTIFICATION THEORY GENDER TO BEHAVIOUR FEMALE ONE-SAMPLE KOLMOGOROV-SMIRNOV (N=90)

Looking at Figure 73 and 74, we can see that both p-values are significant, being .017 for the male group and .004 for the female group. Therefore, we run a Mann-Whitney U-Test in order to determine if there is a significant difference between male and female residents in Austria in regard to their monthly spending on organic food products. Looking at the mean values, the female group has a lesser mean value, 3.48, compared to the male group, 4.00, still indicating that male residents in Austria spend more monthly on organic products than female residents in Austria.

Ranks

	N			Mean Rank		Sum of Ranks	
	1	2	Total	1	2	1	2
VAR001	83.00	90.00	173.00	95.46	79.19	7923.50	7127.50

Test Statistics

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
VAR001	3032.50	7127.50	-2.17	.030

FIGURE 75 - SOCIAL IDENTIFICATION THEORY GENDER MANN-WHITNEY U-TEST (N=173)

Looking at Figure 75, we can see that there is a significant difference since the p-value is lesser than 0.05, in this case 0.030. Meaning that there is a significant difference between male and female residents in Austria in regard to their monthly spending on organic food products. Furthermore, male group has a mean rank of 95.46 (7923.50/83) and the female group has a mean rank of 79.19 (7127.50/90). Meaning that, male residents spend more monthly compared to

female residents in Austria. Similarly, when testing hypotheses, this is a conclusion for this population sample and not for the whole of Austria as the population size is insignificant to make that conclusion.

5.4.7.2.2 Age to behavior

Firstly, a histogram for each group is created in order to see if there is a normal distribution. Like so far, since we are testing between two independent groups. Regarding the population sample, the younger age group consists of 112 respondents while the older age group consists of 62 respondents.

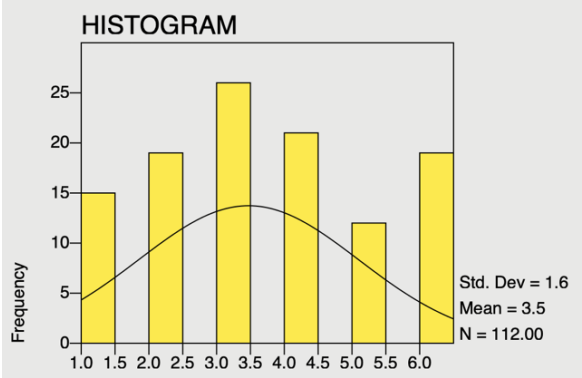

FIGURE 76 - SOCIAL IDENTIFICATION THEORY AGE TO BEHAVIOUR YOUNGER AGE GROUP HISTOGRAM DISTRIBUTION (N=112)

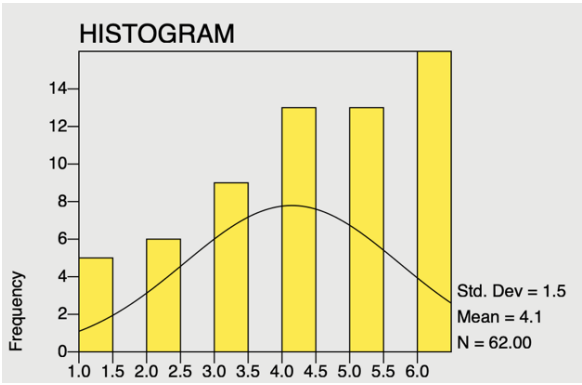

FIGURE 77 - SOCIAL IDENTIFICATION THEORY AGE TO BEHAVIOUR OLDER AGE GROUP HISTOGRAM DISTRIBUTION (N=62)

From looking at the two histograms, Figure 76 and Figure 77, neither the younger age group nor the older age group histograms look normally distributed. Additionally, we can see that the mean score is higher for the older age group than the younger age group, being 4.1 compared to 3.5. Additionally, we can see that the standard deviation is also lower for the older age group compared to the younger age group, at 1.5 compared to 1.6. Therefore, the mean values thus far indicate that older residents in Austria spend more monthly compared to younger residents in Austria. Visually the two figures, 76 and 77, are implying that a parametric t-test should not

be ran. However, because we might distrust our optical impression, we do as if the chart would support the normal assumption and proceed with the Kolmogorov-Smirnov test.

One-Sample Kolmogorov-Smirnov Test

		VAR001
N		112
Normal Parameters	Mean	3.47
	Std. Deviation	1.63
Most Extreme Differences	Absolute	.15
	Positive	.15
	Negative	-.11
Kolmogorov-Smirnov Z		1.59
Asymp. Sig. (2-tailed)		.008

FIGURE 78 - SOCIAL IDENTIFICATION THEORY AGE TO BEHAVIOUR YOUNGER AGE GROUP ONE-SAMPLE KOLMOGOROV-SMIRNOV (N=112)

One-Sample Kolmogorov-Smirnov Test

		VAR001
N		62
Normal Parameters	Mean	4.15
	Std. Deviation	1.59
Most Extreme Differences	Absolute	.17
	Positive	.12
	Negative	-.17
Kolmogorov-Smirnov Z		1.36
Asymp. Sig. (2-tailed)		.037

FIGURE 79 – SOCIAL IDENTIFICATION THEORY AGE TO BEHAVIOUR OLDER AGE GROUP ONE-SAMPLE KOLMOGOROV-SMIRNOV (N=62)

Looking at Figures 78 and 79, we can see that both p-values are significant, being .008 for the younger age group and .037 for the older age group. Therefore, we run a Mann-Whitney U-Test in order to determine if there is a significant difference between younger and older residents in Austria in regards to their monthly spending on organic food products. Looking at the mean values, the younger age group has a lesser mean value, 3.47 compared to the older age group, 4.15, still indicating that older residents in Austria spend more monthly on organic products than younger residents in Austria.

Ranks

	N			Mean Rank		Sum of Ranks	
	1	2	Total	1	2	1	2
VAR001	112.00	62.00	174.00	80.15	100.77	8977.00	6248.00

Test Statistics

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
VAR001	2649.00	8977.00	-2.63	.009

FIGURE 80 - SOCIAL IDENTIFICATION THEORY AGE MANN-WHITNEY U-TEST (N=174)

Looking at Figure 80, we can see that there is a significant difference since the p-value is lesser than 0.05, in this case 0.009. Meaning that there is a significant difference between younger and

older residents in Austria in regard to their monthly spending on organic food products. Furthermore, younger age group has a mean rank of 80.15 (8977.00/112) and the older age group has a mean rank of 100.77 (6248.00/62). Meaning that, older residents spend more monthly compared to younger residents in Austria. Similarly, when testing hypotheses, this is a conclusion for this population sample and not for the whole of Austria as the population size is insignificant to make that conclusion.

5.4.7.2.3 Awareness to behavior

Firstly, a histogram for each group is created in order to see if there is a normal distribution. Like so far, since we are testing between two independent groups. Regarding the population sample, the unaware group consists of 102 respondents while the aware group consists of 72 respondents.

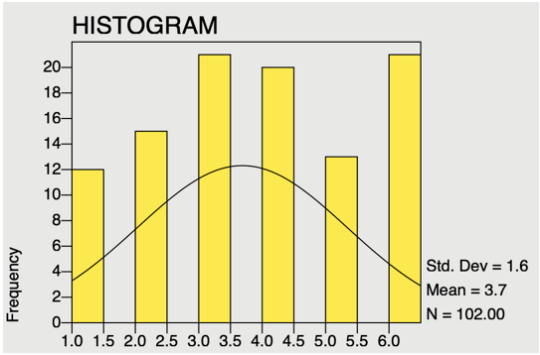

FIGURE 81 – SOCIAL IDENTIFICATION THEORY FARM TO FORK AWARENESS TO BEHAVIOUR UNAWARE GROUP HISTOGRAM DISTRIBUTION (N=102)

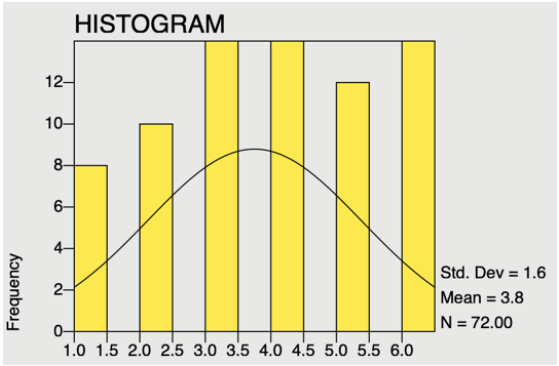

FIGURE 82 - SOCIAL IDENTIFICATION THEORY FARM TO FORK AWARENESS TO BEHAVIOUR AWARE GROUP HISTOGRAM DISTRIBUTION (N=72)

From looking at the two histograms, Figure 81 and Figure 82, neither the aware group nor the unaware group histograms look normally distributed. Additionally, we can see that the mean score is slightly higher for the aware group than the unaware group, being 3.8 compared to 3.7. Additionally, we can see that the standard deviation is the same for both groups, being 1.6. Therefore, the mean values thus far indicate that residents in Austria aware of the Farm to Fork Strategy spend more monthly compared to residents in Austria unaware of the Farm to Fork

Strategy. Visually the two figures, 81 and 82, are implying that a parametric t-test should not be ran. However, because we might distrust our optical impression, we do as if the chart would support the normal assumption and proceed with the Kolmogorov-Smirnov test.

One-Sample Kolmogorov-Smirnov Test

		VAR001
N		102
Normal Parameters	Mean	3.69
	Std. Deviation	1.65
Most Extreme Differences	Absolute	.13
	Positive	.13
	Negative	-.13
Kolmogorov-Smirnov Z		1.33
Asymp. Sig. (2-tailed)		.044

FIGURE 83 - SOCIAL IDENTIFICATION THEORY FARM TO FORK AWARENESS TO BEHAVIOUR UNAWARE GROUP ONE-SAMPLE KOLMOGOROV-SMIRNOV (N=102)

One-Sample Kolmogorov-Smirnov Test

		VAR001
N		72
Normal Parameters	Mean	3.75
	Std. Deviation	1.63
Most Extreme Differences	Absolute	.14
	Positive	.12
	Negative	-.14
Kolmogorov-Smirnov Z		1.18
Asymp. Sig. (2-tailed)		.105

FIGURE 84 - SOCIAL IDENTIFICATION THEORY FARM TO FORK AWARENESS TO BEHAVIOUR AWARE GROUP ONE-SAMPLE KOLMOGOROV-SMIRNOV (N=72)

Looking at Figures 83 and 84, we can see that the p-value for the unaware group is significant, being .044. However, for the aware group it is .105. Therefore, we run a Mann-Whitney U-Test in order to determine if there is a significant difference between aware and unaware residents in Austria in regard to their monthly spending on organic food products. Looking at the mean values, the unaware group has a slightly lesser mean value, 3.69 compared to the aware group, 3.75, still indicating that residents in Austria aware of the Farm to Fork Strategy spend more monthly compared to residents in Austria unaware of the Farm to Fork Strategy.

Ranks

	N			Mean Rank		Sum of Ranks	
	1	2	Total	1	2	1	2
VAR001	102.00	72.00	174.00	86.69	88.65	8842.00	6383.00

Test Statistics

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
VAR001	3589.00	8842.00	-.26	.797

FIGURE 85 - SOCIAL IDENTIFICATION FARM TO FORK AWARENESS MANN-WHITNEY U-TEST (N=174)

Looking at Figure 85, we can see that there is no significant difference since the p-value is greater than 0.05, in this case 0.797. Meaning that there is no significant difference between aware and

unaware residents in Austria in regard to their monthly spending on organic food products. Furthermore, the unaware group has a mean rank of 86.69 (8842.00/102) and the aware group has a mean rank of 88.65 (6383.00/72). Meaning that, residents in Austria aware of the Farm to Fork Strategy spend more monthly compared to residents in Austria unaware of the Farm to Fork Strategy. Similarly when testing hypotheses, this is a conclusion for this population sample and not for the whole of Austria as the population size is insignificant to make that conclusion.

5.4.7.2.4 Highest completed education to behavior

Firstly, a histogram for each of the four groups is created in order to see if there is a normal distribution. In this case, we are testing between four independent groups. Regarding the population sample, the Bachelor's group consists of 68 respondents the Master's group consists of 51 respondents, the High School group consists of 37 respondents, and lastly the Diploma of Doctoral studies group consist of 18 respondents.

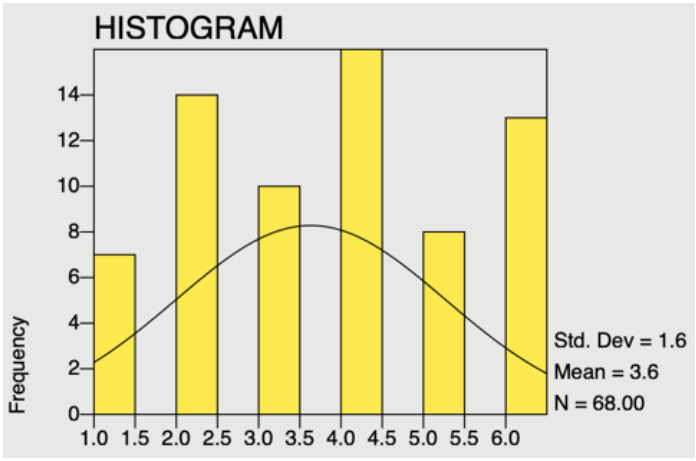

FIGURE 86 - SOCIAL IDENTIFICATION THEORY EDUCATION TO BEHAVIOUR BACHELOR'S GROUP HISTOGRAM DISTRIBUTION (N=68)

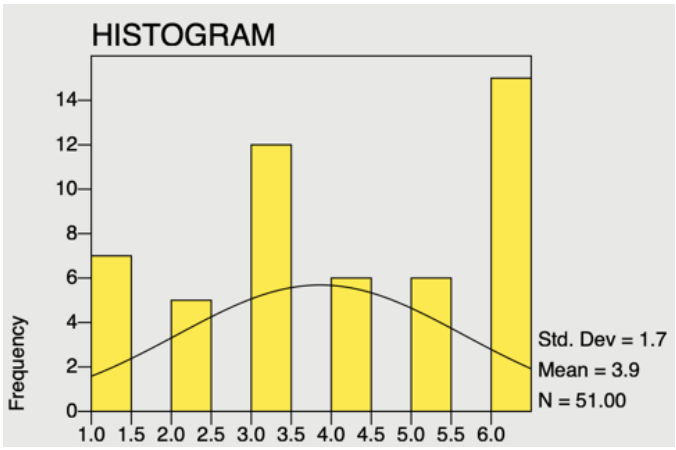

FIGURE 87 - SOCIAL IDENTIFICATION THEORY EDUCATION TO BEHAVIOUR MASTER'S GROUP HISTOGRAM DISTRIBUTION (N=51)

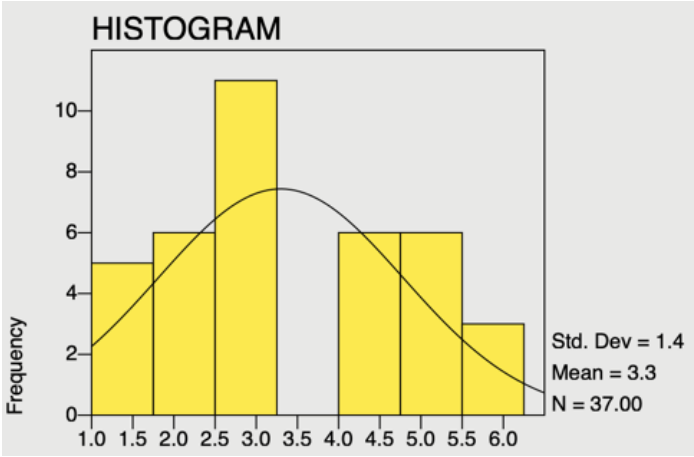

FIGURE 88 - SOCIAL IDENTIFICATION THEORY EDUCATION TO BEHAVIOUR HIGH SCHOOL GROUP HISTOGRAM DISTRIBUTION (N=37)

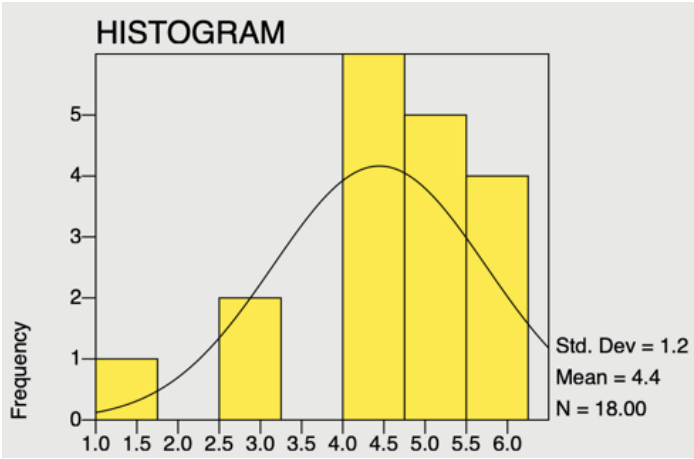

FIGURE 89 - SOCIAL IDENTIFICATION THEORY EDUCATION TO BEHAVIOUR DIPLOMA OF DOCTORAL STUDIES GROUP HISTOGRAM DISTRIBUTION (N=18)

From looking at the histograms, Figures 86, 87, 88 and 89, none of the group histograms look normally distributed. Additionally, we can also see that the Diploma of doctoral studies group has a significantly higher mean compared to the other groups, at 4.4. The Bachelor's group has a mean of 3.6, the Master's group has a mean of 3.9 and the High School group has a mean of 3.3. Additionally, we can see that the Master's group has the highest standard deviation at 1.7m closely followed by the Bachelor's group with 1.6. Furthermore, the High School group has a standard deviation of 1.4, and lastly the lowest standard deviation is 1.2 for the Diploma of doctoral studies group. Similarly, to the previous hypothesis, visually the four figures, 86, 87, 88 and 89, are implying that a ANOVA test not be ran. However, because we might distrust our optical impression, we do as if the chart would support the normal assumption and proceed with the Kolmogorov-Smirnov test.

One-Sample Kolmogorov-Smirnov Test

		VAR001	VAR002	VAR003	VAR004
N		68	51	37	18
Normal Parameters	Mean	3.63	3.86	3.30	4.44
	Std. Deviation	1.64	1.79	1.49	1.29
Most Extreme Differences	Absolute	.15	.18	.17	.20
	Positive	.15	.16	.17	.13
	Negative	-.13	-.18	-.12	-.20
Kolmogorov-Smirnov Z		1.23	1.27	1.06	.84
Asymp. Sig. (2-tailed)		.078	.062	.202	.475

FIGURE 90 - SOCIAL IDENTIFICATION THEORY EDUCATION TO BEHAVIOUR ONE-SAMPLE KOLMOGOROV-SMIRNOV (N=174)

Looking at Figure 90, we can see that none of the values are significant. For Bachelor's it is 0.78, for Master's it is 0.62, for High School it is .202 and for Diploma of doctoral studies it is .475. Additionally, when looking at the means, we can see that the Diploma of doctoral studies has a significantly higher mean compared to the other groups, at 4.44. Additionally, we can see that the Bachelor's group has a mean of 3.63, the Master's group a mean of 3.86 and the High School group a mean of 3.30. Therefore, so far indicating that participants that hold a diploma of doctoral studies spend more monthly on organic food products than other educational groups.

Ranks

	VAR002	N	Mean Rank
VAR001	1	68	85.04
	2	51	92.09
	3	37	74.64
	4	18	110.25
	Total	174	

Test Statistics

	VAR001
Chi-Square	6.88
df	3
Asymp. Sig.	.076

FIGURE 91 - SOCIAL IDENTIFICATION THEORY EDUCATION TO BEHAVIOUR KRUSKAL-WALLIS H TEST (N=174)

From looking at Figure 91, we can see that the p-value is .076 meaning that there is no significant difference, based on educational attainment, among residents in Austria monthly spending on organic products. Furthermore, in regard to the mean scores, we can see that the High School group has the lowest mean score, 74.64, which is followed by the Bachelor's group with a mean score of 85.04. The Master's group has a mean score of 92.09 and the Diploma of Doctoral studies has the highest mean score with it being 110.25. Therefore, from the results of the Kruskal-Wallis-H Test we can see that there is a trend that with a higher completed education, the consumer spends more money monthly on average on organically produced products. Similarly when testing hypotheses, this is a conclusion for this population sample and not for the whole of Austria as the population size is insignificant to make that conclusion.

5.4.7.2.5 Location to behavior

Firstly, a histogram for each group is created in order to see if there is a normal distribution. Like so far, since we are testing between two independent groups. Regarding the population sample, the Capital group consists of 122 respondents while the Non-Capital group consists of 52 respondents.

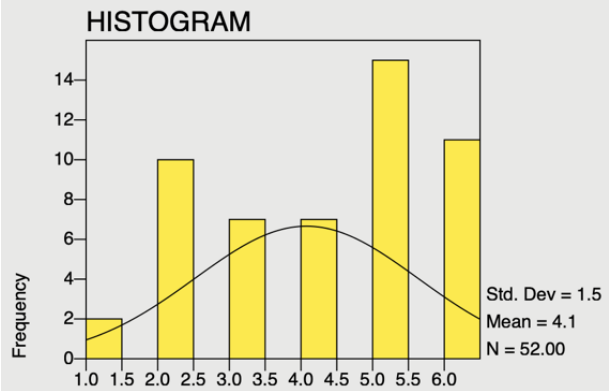

FIGURE 92 – SOCIAL IDENTIFICATION THEORY LOCATION TO BEHAVIOUR NON-CAPITAL GROUP HISTOGRAM DISTRIBUTION (N=52)

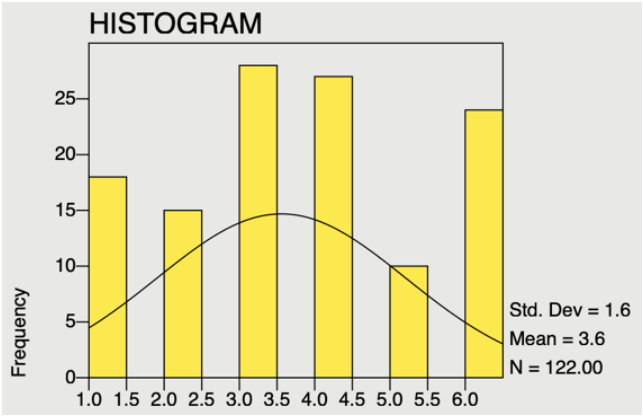

FIGURE 93 - SOCIAL IDENTIFICATION THEORY LOCATION TO BEHAVIOUR CAPITAL GROUP HISTOGRAM DISTRIBUTION (N=122)

From looking at the two histograms, Figure 92 and Figure 93, neither the capital group nor the non-capital group histograms look normally distributed. Additionally, we can see that the mean score is slightly higher for the non-capital group than the capital group, being 4.1 compared to 3.6. Additionally, we can see that the standard deviation is slightly higher for the capital group compared to the non-capital group, being 1.6 compared to 1.5. Therefore, the mean values thus far indicate that residents in Austria located outside of the capital, Vienna, spend more monthly compared to residents in Austria located in the capital. Visually the two figures, 92 and 93, are implying that a parametric t-test should not be ran. However, because we might distrust our optical impression, we do as if the chart would support the normal assumption and proceed with the Kolmogorov-Smirnov test.

One-Sample Kolmogorov-Smirnov Test

		VAR001
N		52
Normal Parameters	Mean	4.08
	Std. Deviation	1.56
Most Extreme Differences	Absolute	.22
	Positive	.14
	Negative	-.22
Kolmogorov-Smirnov Z		1.61
Asymp. Sig. (2-tailed)		.007

FIGURE 94 - SOCIAL IDENTIFICATION THEORY LOCATION TO BEHAVIOUR NON-CAPITAL GROUP ONE-SAMPLE KOLMOGOROV-SMIRNOV (N=52)

One-Sample Kolmogorov-Smirnov Test

		VAR001
N		122
Normal Parameters	Mean	3.56
	Std. Deviation	1.66
Most Extreme Differences	Absolute	.13
	Positive	.13
	Negative	-.13
Kolmogorov-Smirnov Z		1.46
Asymp. Sig. (2-tailed)		.020

FIGURE 95 - SOCIAL IDENTIFICATION THEORY LOCATION TO BEHAVIOUR CAPITAL GROUP ONE-SAMPLE KOLMOGOROV-SMIRNOV (N=122)

Looking at Figures 94 and 95, we can see that both p-values are significant, being .007 for the non-capital group and .020 for the capital group. Therefore, we run a Mann-Whitney U-Test in order to determine if there is a significant difference between residents in Austria located outside of the capital, Vienna, in spending more monthly compared to residents in Austria located in the capital. Looking at the mean values, the non-capital group has a higher mean value, 4.08, compared to the capital group, 3.56, still indicating that residents in Austria located outside of the capital, Vienna, spend more monthly compared to residents in Austria located in the capital.

Ranks

	N			Mean Rank		Sum of Ranks	
	1	2	Total	1	2	1	2
VAR001	52.00	122.00	174.00	98.20	82.94	5106.50	10118.50

Test Statistics

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
VAR001	2615.50	10118.50	-1.86	.063

FIGURE 96 - SOCIAL IDENTIFICATION LOCATION MANN-WHITNEY U-TEST (N=174)

Looking at Figure 96, we can see that there is no significant difference since the p-value is greater than 0.05, in this case 0.063. Meaning that there is no significant difference between residents in Austria located outside of the capital, Vienna, in spending more monthly compared to residents in Austria located in the capital. Furthermore, the non-capital group has a mean rank of 98.20 (5106.50/52) and the capital group has a mean rank of 82.94 (10118.50/122). Meaning that, that residents in Austria located outside of the capital, Vienna, spend more monthly compared to residents in Austria located in the capital. Similarly, when testing hypotheses, this is a

conclusion for this population sample and not for the whole of Austria as the population size is insignificant to make that conclusion.

6 DISCUSSION OF FINDINGS

Throughout this section the findings are discussed. Mainly, the findings are split into four groups. The first comparison group is defined as organic and conventional shoppers. The second group consists of participants being aware and unaware of the Farm to Fork strategy prior to completing the survey. The second group also consists of a subgroup, which are only those participants aware of the Farm to Fork strategy prior to the survey. The third group consists of participants that find food safety more important when buying food and participants that find ethics and beliefs more important when buying food. Lastly, the fourth group being dedicated to the residential location of participants either located in the capital of Austria or located outside of the capital. Within the groups, the mean scores of the answers are discussed.

6.1 Organic and Conventional Shoppers Discussion

Starting off with the organic and conventional shoppers' discussion, the corresponding question for this separation is question 17 'Which of the following products you purchase usually are organic products?' Participants that have selected seven or more products are considered organic shoppers, i.e. more than 50% of their shopping basket is organic, and participants that have selected one to six products are considered conventional shoppers. In total, there are 64 organic shoppers and 110 conventional shoppers in the sample. Figure 97 showcases the number of respondents purchasing a product that is organic.

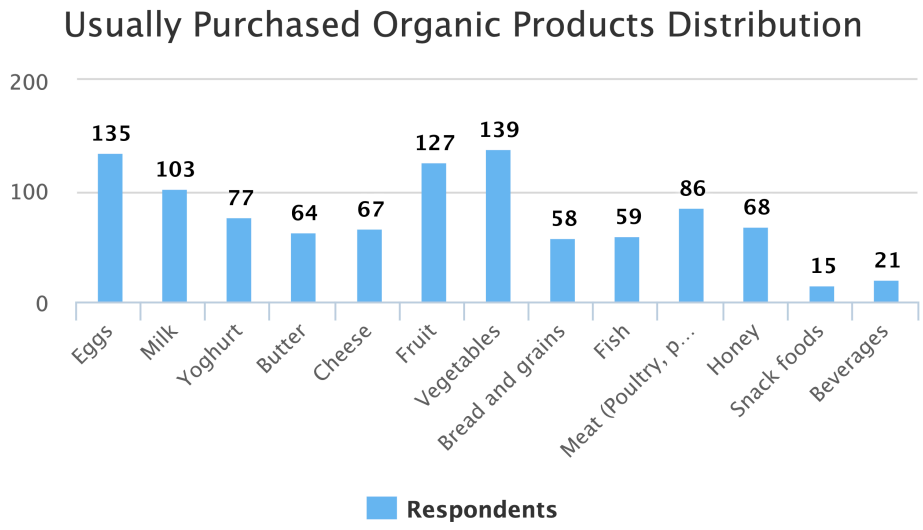

FIGURE 97 - USUALLY PURCHASED ORGANIC PRODUCTS DISTRIBUTION (N=174)

From looking at Figure 97 we can see that the most usually purchased organic products are: 'Vegetables' being bought organic by 139 respondents, 'Eggs' being bought organic by 135 respondents, 'Fruit' being bought organic by 127 respondents and 'Milk' being bought organic by 103 respondents. On the other hand, the two least organic purchased products are 'Beverages'

being bought organic by 21 respondents and 'Snack foods' being bought organic by 15 respondents. Figure 98 showcases the AgarMarkt Austria (AMA) annual rolling agricultural market analysis for January until September 2021, which is the same figure that is used as an assumption for Hypothesis 1 & 2. From looking at the figure, we can see that milk and extended shelf life (ESL) milk, along with natural yoghurt, are the two most consumed organic products by consumers residing in Austria. However, milk & ESL milk and natural yoghurt are ranked 4th and 6th most usually purchased organic products for this population sample, compared to 1st and 2nd for the AMA annual rolling agricultural market analysis. Furthermore, in this population sample, vegetables and fruit are ranked 1st and 2nd compared to 3rd and 4th , when taking into account that potatoes are vegetables. Additionally, eggs are ranked 5th in the AMA study, whereas for this population sample they are ranked 3rd most usually purchased organic product. A striking difference is for seen when comparing meat & poultry. Namely, in the AMA study they are ranked the lowest usually purchased organic product. In comparison to this research where meat (poultry, pork and beef) is ranked 5th. Furthermore, this study fills the gap when it comes to organic consumption of bread & grains, fish, honey, snack foods and beverages, having collected data from residents in Austria on their consumption of those products. Lastly, an important factor to be taken into consideration is that the AMA study has a significantly larger population sample compared to this research, approximately 2,800 households in Austria (Das RollAMA, 2021).

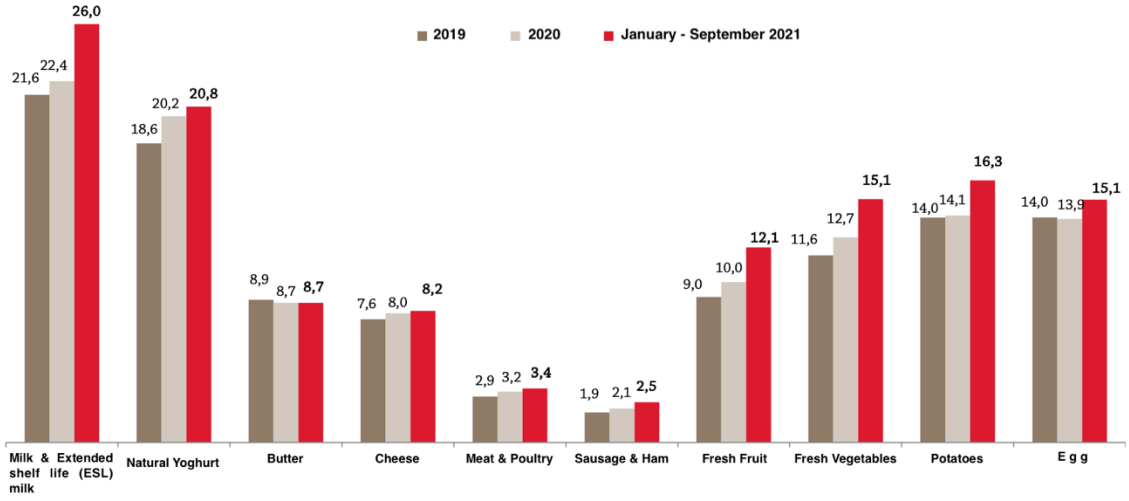

FIGURE 98 - USUALLY PURCHASED ORGANIC PRODUCTS AMA (*DAS ROLLAMA*, 2021)

Table 4 showcases the means for both the organic and conventional groups, as well as the difference between the two groups.

Sustainable food production	Conventional group	Organic group	Difference between conventional and organic groups
1. Organic farming is complying with specific rules on pesticides, fertilisers and antibiotics.	4,02	4,05	0,03
2. Organic farming is making more efficient use of resources.	3,25	3,48	0,24
3. Organic products are produced with higher respect for animal welfare.	3,81	3,95	0,14
4. Agriculture has already made a major contribution in fighting climate change.	2,58	2,59	0,01
5. Agriculture is one of the major causes of climate change.	3,41	3,70	0,29
6. Encouraging conventional farmers to turn into organics is an important priority.	3,84	4,14	0,30
7. Strengthening the farmer's position in the food supply chain is an important priority.	4,21	4,36	0,15
8. I am in favour of the European Union continuing to provide subsidy payments to farmers who carry out agricultural practices beneficial to the climate and the environment.	4,35	4,09	-0,25
9. Income support for organic farmers should increase over the next ten years.	4,08	4,19	0,11
Sustainable food processing & distribution			
1. Short supply chains are an important factor when I am purchasing my food.	3,50	3,94	0,44
2. Food is produced in a manner that respects local tradition and 'know-how' is important factor when I am purchasing my food.	3,40	3,89	0,49
3. Food comes from a known geographical area is important factor when I am purchasing my food.	3,46	4,13	0,66
4. I would be willing to purchase seasonal products and not have all ingredients available all the time.	3,95	4,27	0,31
Sustainable food consumption			
1. It is important to me that food bears a label that guarantees quality.	3,80	4,14	0,34
2. I am aware of EU quality labels and EU organic farming logo.	3,38	3,77	0,38
3. I am aware of what the EU quality labels and EU organic farming logo stand for.	3,70	4,02	0,32
Personal information			
1. Perception of the Farm to Fork strategy.	3,82	3,89	0,07
2. I have a positive attitude towards organically produced products.	4,15	4,55	0,39
3. I believe that when purchasing organic products, I am expressing my desired identity.	3,41	3,73	0,33

TABLE 4 - ORGANIC AND CONVENTIONAL SHOPPERS MEANS DISCUSSION

From looking at Table 4 we can see that the organic group has a higher mean score for every question apart from one. The once question being 'I am in favor of the European Union continuing to provide subsidy payments to farmers who carry out agricultural practices beneficial to the climate and the environment.' The mean difference for that question is 0.25 in favor of the conventional group. On the other hand, the mean scores for other questions do not differ drastically between the two groups. Highlighted in yellow are two questions that have the highest mean score difference between the two groups. The questions are 'Food is produced in a manner that respects local tradition and 'know-how' is important factor when I am purchasing my food' and 'Food comes from a known geographical area is important factor when I am purchasing my food.' The differences between the two mean scores are 0.49 and 0.66.

6.2 Farm to Fork Awareness Discussion

The question corresponding to this discussion is question 28 'Prior to this survey, were you aware of the Farm to Fork strategy?' Out of 174 total respondents, 102 (58.6%) respondents were not aware of the Farm to Fork and is therefore in the 'Unaware group.' On the other hand, 72 (41.4%) respondents was aware of the Farm to Fork prior to completing the survey and is therefore in the 'Aware group.' Table 5 showcases the mean values for the questions for both groups, aware and unaware, as well as, the difference between aware and unaware groups.

	Aware group	Unaware group	Difference between aware and unaware groups
Sustainable food production			
1. Organic farming is complying with specific rules on pesticides, fertilisers and antibiotics.	4,10	3,98	-0,12
2. Organic farming is making more efficient use of resources.	3,39	3,29	-0,09
3. Organic products are produced with higher respect for animal welfare.	3,75	3,94	0,19
4. Agriculture has already made a major contribution in fighting climate change.	2,69	2,51	-0,18
5. Agriculture is one of the major causes of climate change.	3,53	3,51	-0,02
6. Encouraging conventional farmers to turn into organics is an important priority.	3,78	4,07	0,29
7. Strengthening the farmer's position in the food supply chain is an important priority.	4,15	4,34	0,19
8. I am in favour of the European Union continuing to provide subsidy payments to farmers who carry out agricultural practices beneficial to the climate and the environment.	4,19	4,29	0,10
9. Income support for organic farmers should increase over the next ten years.	3,94	4,25	0,30
Sustainable food processing & distribution			
1. Short supply chains are an important factor when I am purchasing my food.	3,67	3,66	-0,01
2. Food is produced in a manner that respects local tradition and 'know-how' is important factor when I am purchasing my food.	3,53	3,62	0,09
3. Food comes from a known geographical area is important factor when I am purchasing my food.	3,69	3,72	0,02
4. I would be willing to purchase seasonal products and not have all ingredients available all the time.	3,96	4,15	0,19
Sustainable food consumption			
1. It is important to me that food bears a label that guarantees quality.	3,93	3,92	-0,01
2. I am aware of EU quality labels and EU organic farming logo.	3,96	3,22	-0,74
3. I am aware of what the EU quality labels and EU organic farming logo stand for.	4,04	3,62	-0,42
Personal information			
1. Perception of the Farm to Fork strategy.	3,85	/	
2. I have a positive attitude towards organically produced products.	4,04	4,48	0,44
3. I believe that when purchasing organic products, I am expressing my desired identity.	3,47	3,57	0,10

TABLE 5 - FARM TO FORK AWARENESS MEANS DISCUSSION

From looking at Table 5, we can see that the mean difference in favor of the unaware group is highlighted in yellow. Starting off with the first question segment, the 'Sustainable food production' segment, we can see that the aware group has a higher mean score four times and the

unaware group has a higher mean score five times. The most notable differences are with the questions 'Encouraging conventional farmers to turn into organics is an important priority' and 'Income support for organic farmers should increase over the next ten years', with the mean score difference being 0.29 and 0.30 in favor of the unaware group. Additionally, for question 'Agriculture is one of the major causes of climate change' the mean score difference is 0.02 in favor of the aware group which is an insignificant difference to make an assumption out of. Similarly, the for the question 'Food produced in a manner that respects local tradition and 'know-how' is important factor when I am purchasing my food' also has a slightly higher mean if favor of the unaware group, to be precise 0.09.

6.2.1 Farm to Fork Awareness Agreement Discussion

This section discusses the mean scores between the respondents aware of the Farm to Fork strategy prior to completing the survey. As mentioned above, there are 72 such participants. The aware participants have been asked a following question 'What is your perception of the Farm to Fork strategy?' Figure 99 showcases the distribution of the 72 respondents.

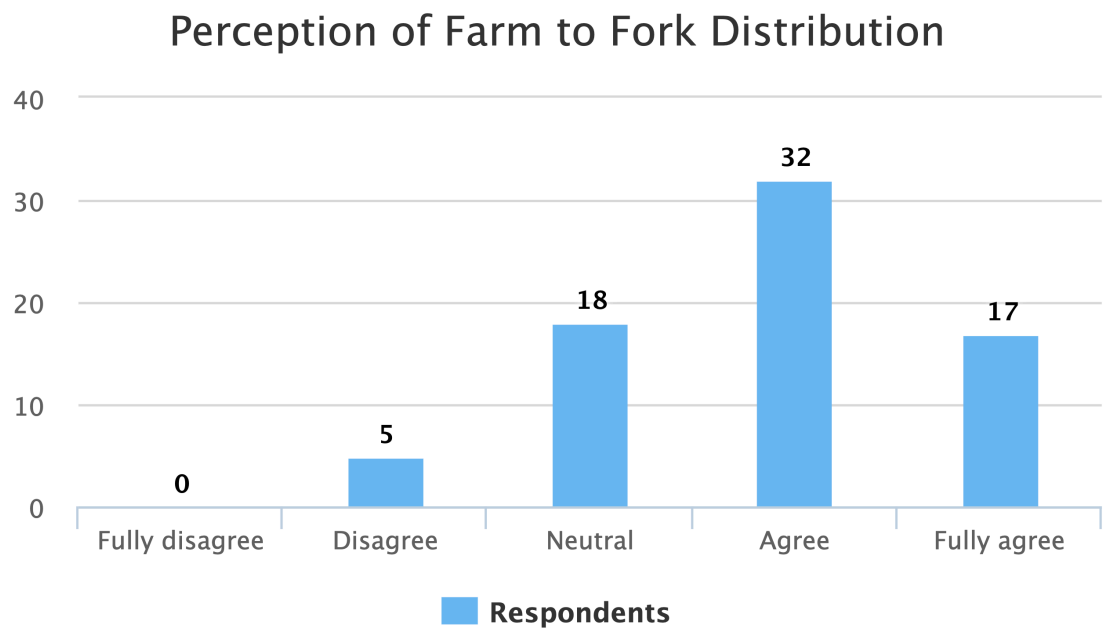

FIGURE 99 - PERCEPTION OF THE FARM TO FORK DISTRIBUTION (N=72)

From looking at Figure 99, we can see that no participants fully disagree with the Farm to Fork strategy. Additionally, we can see that five of them disagree with it, 18 are neutral towards it, 32 agree with it and 17 fully agree with the Farm to Fork strategy. Furthermore, Table 6 showcases the mean scores for all questions in regard to the four answer groups.

Sustainable food production	Disagree group	Neutral group	Agree group	Fully agree group
1. Organic farming is complying with specific rules on pesticides, fertilisers and antibiotics.	3,00	4,06	4,22	4,24
2. Organic farming is making more efficient use of resources.	2,00	3,17	3,66	3,53
3. Organic products are produced with higher respect for animal welfare.	1,40	3,89	4,16	3,53
4. Agriculture has already made a major contribution in fighting climate change.	2,60	2,56	2,88	2,53
5. Agriculture is one of the major causes of climate change.	3,00	3,22	3,72	3,65
6. Encouraging conventional farmers to turn into organics is an important priority.	1,40	3,28	4,13	4,35
7. Strengthening the farmer's position in the food supply chain is an important priority.	1,60	4,17	4,44	4,35
8. I am in favour of the European Union continuing to provide subsidy payments to farmers who carry out agricultural practices beneficial to the climate and the environment.	1,40	4,11	4,47	4,59
9. Income support for organic farmers should increase over the next ten years.	1,40	3,56	4,28	4,47
Sustainable food processing & distribution				
1. Short supply chains are an important factor when I am purchasing my food.	2,00	3,89	3,63	4,00
2. Food is produced in a manner that respects local tradition and 'know-how' is important factor when I am purchasing my food.	1,60	3,39	3,56	4,18
3. Food comes from a known geographical area is important factor when I am purchasing my food.	1,80	3,83	3,66	4,18
4. I would be willing to purchase seasonal products and not have all ingredients available all the time.	2,00	3,94	4,19	4,12
Sustainable food consumption				
1. It is important to me that food bears a label that guarantees quality.	1,60	3,67	4,19	4,41
2. I am aware of EU quality labels and EU organic farming logo.	2,00	4,39	3,78	4,41
3. I am aware of what the EU quality labels and EU organic farming logo stand for.	/	4,06	3,91	4,20
Personal information				
1. Perception of the Farm to Fork strategy.	2,00	3,00	4,00	5,00
2. I have a positive attitude towards organically produced products.	1,20	3,67	4,38	4,65
3. I believe that when purchasing organic products, I am expressing my desired identity.	1,40	3,00	3,66	4,24

TABLE 6 - FARM TO FORK AWARENESS AGREEMENT MEANS DISCUSSION

From looking at Table 6 we can see the highlighted boxes in the 'Fully agree group.' Those highlighted boxed indicate that there is a continuous rise in mean scores in regards to the participants agreement with the Farm to Fork strategy. For instance, for the first question 'Organic farming is complying with specific rules on pesticides, fertilizers and antibiotics' we can see that it is highlighted. This is because for the 'Disagree group' the mean score is 3.00, for the 'Neutral group' the mean score is 4.06, for the 'Agree group' the mean score is 4.22 and for the 'Fully agree group' the mean score is 4.24. Therefore, we can see that that question has a continuous increase in its mean score in regard to the participants agreement with the Farm to Fork strategy. Furthermore, we can see that the only time a mean score for the 'Disagree group' is higher than any mean score for the other three groups is for the question 'Agriculture

has already made a major contribution in fighting climate change.' In that case, the mean score for the 'Disagree group' is 2.6, for the 'Neutral group' 2.56, for the 'Agree group' 2.88 and for the 'Fully agree group' 2.53. Therefore, it can be concluded that for the highlighted questions, the higher the agreement rate with the Farm to Fork strategy, the higher the importance placed on statements and questions in the survey, i.e. proposed Farm to Fork benefits.

6.3 Food safety and ethics & beliefs Discussion

The question corresponding to this discussion is question 20 which is as follows 'Which of these two factors are more important for you when buying food?' Figure 100 showcases the distribution of 174 participants. We can see that 126 respondents (72.4%) deem food safety as a more important factor when buying food and that 48 (27.6%) respondents find ethics and beliefs a more important factor when buying food.

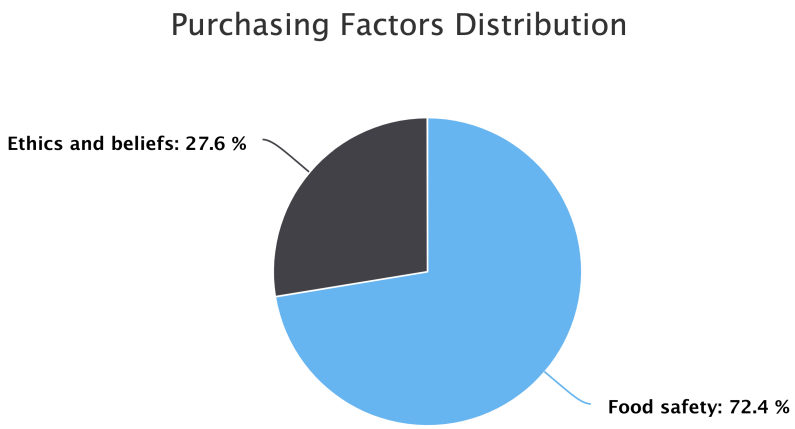

FIGURE 100 - PURCHASING FACTORS DISTRIBUTION (N=174)

Table 7 showcases the means for both the food safety and ethics & beliefs groups, as well as, the difference between the two groups.

	Food safety group	Ethics & beliefs group	Difference between food safety and ethics & beliefs groups
Sustainable food production			
1. Organic farming is complying with specific rules on pesticides, fertilisers and antibiotics.	4,04	4,00	0,04
2. Organic farming is making more efficient use of resources.	3,29	3,46	-0,17
3. Organic products are produced with higher respect for animal welfare.	3,87	3,83	0,04
4. Agriculture has already made a major contribution in fighting climate change.	2,61	2,52	0,09
5. Agriculture is one of the major causes of climate change.	3,49	3,58	-0,09
6. Encouraging conventional farmers to turn into organics is an important priority.	3,93	4,00	-0,07
7. Strengthening the farmer's position in the food supply chain is an important priority.	4,33	4,10	0,22
8. I am in favour of the European Union continuing to provide subsidy payments to farmers who carry out agricultural practices beneficial to the climate and the environment.	4,25	4,25	0,00
9. Income support for organic farmers should increase over the next ten years.	4,13	4,10	0,02
Sustainable food processing & distribution			
1. Short supply chains are an important factor when I am purchasing my food.	3,59	3,85	-0,27
2. Food is produced in a manner that respects local tradition and 'know-how' is important factor when I am purchasing my food.	3,58	3,58	0,00
3. Food comes from a known geographical area is important factor when I am purchasing my food.	3,72	3,67	0,06
4. I would be willing to purchase seasonal products and not have all ingredients available all the time.	4,10	4,00	0,10
Sustainable food consumption			
1. It is important to me that food bears a label that guarantees quality.	3,90	3,98	-0,07
2. I am aware of EU quality labels and EU organic farming logo.	3,48	3,65	-0,17
3. I am aware of what the EU quality labels and EU organic farming logo stand for.	3,83	3,84	-0,01
Personal information			
1. Perception of the Farm to Fork strategy.	3,71	4,13	-0,42
2. I have a positive attitude towards organically produced products.	4,30	4,29	0,01
3. I believe that when purchasing organic products, I am expressing my desired identity.	3,46	3,71	-0,25

TABLE 7 - FOOD SAFETY AND ETHICS & BELIEFS MEANS DISCUSSION

Firstly, from looking at Table 7, we can see that the highlighted cells showcase when the 'Ethics & beliefs group' has a higher mean score compared to the 'Food safety group.' The most notable difference is for the question 'What is your perception of the Farm to Fork strategy?' where a mean difference of 0.42 in favor of the 'Ethics & beliefs group' can be seen. Additionally, the 'Ethics & beliefs group' also believes more that when purchasing organic products, they are expressing their desired identity more than the 'Food safety group.' The difference in the mean scores is 0.25, 3.46 for the 'Food safety group' and 3.71 for the 'Ethics & beliefs group.' Furthermore, the 'Ethics and beliefs group' also finds short supply chains an important factor when purchasing their food more than the 'Food safety group' by 0.27. Lastly, in most cases it can be seen that the mean difference is rather insignificant, therefore, to make a concrete conclusion a larger population sample would be needed.

6.4 Capital and Non-capital Discussion

In regard to the location of the respondents, in the survey, consumers in Austria have had the option to choose in which federal state they are located in. Since the state of Vienna is where most of the respondents reside, 122 (70.1%) respondents, the other states are grouped together in order to have this discussion. More specifically, the other 50 (29.9%) respondents. Table 8 showcases the mean scores for both groups, including the difference in mean scores between the two groups.

Sustainable food production	**Capital group**	**Non-Capital group**	**Difference betwwen capital & non-capital groups**
1. Organic farming is complying with specific rules on pesticides, fertilisers and antibiotics.	3,89	4,35	-0,45
2. Organic farming is making more efficient use of resources.	3,22	3,60	-0,37
3. Organic products are produced with higher respect for animal welfare.	3,75	4,12	-0,36
4. Agriculture has already made a major contribution in fighting climate change.	2,58	2,60	-0,01
5. Agriculture is one of the major causes of climate change.	3,52	3,50	0,02
6. Encouraging conventional farmers to turn into organics is an important priority.	3,97	3,90	0,06
7. Strengthening the farmer's position in the food supply chain is an important priority.	4,16	4,50	-0,34
8. I am in favour of the European Union continuing to provide subsidy payments to farmers who carry out agricultural practices beneficial to the climate and the environment.	4,25	4,25	0,00
9. Income support for organic farmers should increase over the next ten years.	4,15	4,06	0,09
Sustainable food processing & distribution			
1. Short supply chains are an important factor when I am purchasing my food.	3,50	4,04	-0,54
2. Food is produced in a manner that respects local tradition and 'know-how' is important factor when I am purchasing my food.	3,52	3,71	-0,19
3. Food comes from a known geographical area is important factor when I am purchasing my food.	3,61	3,94	-0,34
4. I would be willing to purchase seasonal products and not have all ingredients available all the time.	3,95	4,35	-0,40
Sustainable food consumption			
1. It is important to me that food bears a label that guarantees quality.	3,91	3,96	-0,05
2. I am aware of EU quality labels and EU organic farming logo.	3,47	3,65	-0,19
3. I am aware of what the EU quality labels and EU organic farming logo stand for.	3,81	3,89	-0,08
Personal information			
1. Perception of the Farm to Fork strategy.	3,91	3,72	0,19
2. I have a positive attitude towards organically produced products.	4,23	4,46	-0,23
3. I believe that when purchasing organic products, I am expressing my desired identity.	3,49	3,62	-0,12

TABLE 8 - CAPITAL AND NON-CAPITAL DISCUSSION

From looking at Table 8 we can clearly see that the 'Non-Capital group' has in most cases a higher mean score. Regarding the 'Sustainable food production' question group, the 'Capital group' has

a higher mean score on only three occasions. Additionally, in those three occasions the mean score is not drastically higher. For instance, question 'Income support for organic farmers should increase over the next ten years' is where the 'Capital group' has the highest mean score difference and it is only 0.09. Whereas the 'Non-Capital group' has a much higher mean score difference. For instance, questions 'Organic farming is complying with specific rules on pesticides, fertilizers and antibiotics', 'Organic farming is making more efficient use of resources', 'Organic products are produced with higher respect for animal welfare' and 'Strengthening the farmer's position in the food supply chain is an important priority' all have a significantly higher mean compared to the other group, 0.45, 0.37, 0.36 and 0.34. Similarly, regarding the 'Sustainable food processing & distribution question group, in this case, the 'Non-Capital group' has a significantly higher mean score compared to the 'Capital group' for every question. The highest difference is for question 'Short supply chains are an important factor when I am purchasing my food' and it is 0.54 and the lowest difference is for question 'Food is produced in a manner that respects local tradition and 'know-how' is important factor when I am purchasing my food' and it is 0.19. More of the same stands for the 'Sustainable food consumption' question group which indicates that 'Non-Capital group' has higher importance that food bears a label that guarantees quality, only slightly with the mean difference being 0.05, and that they are more aware of the EU quality labels and EU organic farming logo than the 'Capital group', mean difference being 0.19. Additionally, not only is the 'Non-Capital group' more aware of the EU quality labels and EU organic farming logo than the 'Capital group', they are also slightly more aware of what the EU quality labels and EU organic farming logo stand for, the mean difference being 0.08. Lastly, in regard to the 'Personal Information' question group, we can see that the 'Capital group' has a higher perception, i.e. agreement with what the Farm to Fork strategy aims to bring, compared to the 'Non-Capital group', with the mean difference being 0.19.

7 CONCLUSION

7.1 Summary

Organic farming addresses many issues brought by conventional farming, as outlined in the Literature review. Therefore, policies such as Farm to Fork are crucial to encourage conventional farmers to convert into organic farmers. As consumers determine the demand for products, it is crucial to understand consumers' perception of proposed food benefits brought by the Farm to Fork strategy. Therefore, the study used a conceptual framework based on the Theory of Planned Behavior and Social Identification Theory to discover which factors significantly impact consumer behavior. Additionally, the research also focuses on the different perceptions of different socio-demographic groups to determine if there are any significant differences. The variables are statements and questions based on the Farm to Fork strategy's proposed production, consumption, and distribution benefit. The findings indicate that the attitude towards the behavior has a more significant impact on intention than the subjective norm. Furthermore, intention has the most significant impact on behavior compared to perceived behavioral control and actual behavioral control. Additionally, findings indicate a significant difference for two independent groups regarding SI, which are gender and age groups. On the other hand, prior Farm to Fork awareness, education level, and location do not indicate a significant difference. Regarding hypotheses, it has been concluded that there is no significant difference between male and female consumers residing in Austria that have a positive attitude towards organically produced products. Additionally, there is no significant difference between male and female consumers residing in Austria who believe they express their desired identities when purchasing organic products. Moreover, there is no significant difference, based on educational attainment, between consumers residing in Austria who perceive that agriculture has already made a major contribution in fighting climate change. Likewise, there is no significant difference of prior Farm to Fork awareness between consumers residing in Austria that perceive agriculture as one of the major causes of climate change. Similarly, there is no significant difference between consumers residing in Austria that do and do not find television as an important source of information that conveys strengthening the farmer's position in the supply chain. On the other hand, there is a significant difference between age groups of consumers residing in Austria prepared to pay at least 10% more for agricultural goods produced by carbon reducing processes. The finding of this research may serve as a solid foundation for future research and provide significant insight into how consumers in Austria perceive the proposed Farm to Fork benefits. To answer the research question, it can be concluded that consumers in Austria have a good perception towards the proposed food benefits brought by the Farm to Fork strategy. Based off mean scores, for the production benefit, the mean score is 3.77, for the distribution benefit the mean score is 3.75, and for the consumption benefit, the mean score is 3.76.

7.2 Contribution to knowledge

This research contributed to Farm to Fork research, to be more specific, research determining the perception of residents on the proposed Farm to Fork benefits. Additionally, the research also provides a clearer understanding of the perception residents in Austria have towards the proposed Farm to Fork benefits by participants indicating with which question and the statement they agree and disagree, and at which level exactly. Furthermore, the research also provides an insight into participants' attitudes towards statements based on the TPB and SI. Moreover, the research showcases which variables and constraints influence consumer behavior the most regarding organically produced products. Finally, the research provides a comprehensive analysis of the Farm to Fork strategy and other relevant strategies so that the readers can inform themselves accordingly.

7.3 Limitations

Despite the research providing a clearer understanding of consumers in Austria's perception of organically produced products, limitations are still present. Although a population sample of 174 individuals is satisfactory to analyze and see trends in the data, it is not sufficient to make conclusions for all consumers residing in Austria. Furthermore, the majority of participants reside in Vienna, like the researcher; therefore, it can be said that there is a researcher's bias. Furthermore, a significant limitation pointed out by participants through voluntary comments is that there was no option to specify their personal dietary preferences. This limitation strongly affects the organic and conventional groups. For instance, if a participant is vegan, they can only select from question 17 'Which of the following products you purchase usually are organic products?' a total of 5 products. This means that even if they were to select all 5 products, they still would not be classified as organic consumers in this research because there was no option to specify their dietary preference beforehand. Additionally, for question 19 'From where do you obtain information on food risk?' participants have expressed their desire through voluntary comments and direct messages to have 'Internet' as an option. After communicating with said participants, the ones that shared their thoughts via a direct message, they elaborated that they do a certain amount of research on food risk on their own on the Internet and therefore felt that should have been an option for them to choose as well.

7.4 Future research

Since the previous chapter discussed the limitations of this research, this chapter discusses the recommendations for future research as there is still plenty to be researched to obtain a clearer perspective on consumer perception of proposed Farm to Fork benefits in Austria. In order to continue research on this topic, a similar study can be conducted that addresses the limitations outlined in the previous chapter. Firstly, a larger population sample size is needed to make gen-

eral assumptions for people residing in Austria rather than just for the present sample. Furthermore, to avoid having the majority of participants from one location, a recommendation for future research is that the researcher focuses on each federal state at one point during the data collection process. For instance, prior to finalizing data collection for this research, respondents were predominantly from Vienna, at the time, approximately 92%. In order to reduce that, the researcher was extensively contacting potential participants in other federal states, either via LinkedIn or Facebook and Reddit groups and forums. This had a positive effect and the percentage reduced to 70.1%. Therefore, it is recommended to take more time for the data collection process to have a larger sample, in this case, for each federal state to make more concrete conclusions. Additionally, as participants mentioned through voluntary comments, cooperate with a governing body in that federal state to reach more participants. Furthermore, this will also allow for communication of the results between the governing bodies easier; in the case of Austria, a governing body would be a local magistrat. Secondly, it is recommended to include dietary preferences to understand better if consumers are organic or conventional. For this research, the threshold was set at 50% of the shopping basket to be organic products to be considered organic. Without dietary preferences, participants who follow a vegan diet can only choose up to 5 products they purchase are organic; therefore, even if all 5 of those products are organic, without considering dietary preferences, they are part of the conventional shoppers' group. Thirdly, it is recommended to include the Internet as a source of information about food risk as participants have informed that they researched the topic on their own. Lastly, for question 15 'How much money do you spend monthly on organic products?' an option 'I do not purchase organic products' or 'I do not spend money on organic products' should be added in order to distinguish participants that do not purchase and spend money on organic products. As one can see, there are several possibilities for further research on this topic.

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APPENDICES

Appendix 1: Survey

Questionnaire

The aim of the survey is to analyse consumer perception related to the proposed food production and consumption benefits brought by the Farm to Fork strategy in Austria. The survey is structured on the four key components of the Farm to Fork strategy, those being Food Loss & Waste Prevention, Sustainable Food Production, Sustainable Food Processing & Distribution and Sustainable Food Consumption. The survey will be conducted entirely online and the researcher will make use of the snowball effect and social media, specifically LinkedIn, in order to obtain as many respondents as possible. The results of this survey will be used within the context of a master thesis that aims to relate food production and consumption benefits from the Farm to Fork strategy and their impact on consumers. All responses are treated completely anonymous and are only used for statistical analysis.

- Sustainable food production
    - **Organic farming** (Likert scale 1-5; 1 – "I fully disagree" – 5 "I fully agree")
        - Organic farming is complying with specific rules on pesticides, fertilisers and antibiotics
        - Organic products are produced with higher respect for animal welfare
        - Organic farming is making more efficient use of resources
        - Agriculture has already made a major contribution in fighting climate change
        - Agriculture is one of the major causes of climate change
    - **Environmental impacts of organic farming** (Multiple choice – "Which of the following do you think is a consequence of organic farming?"
        - Protection of the environment and the climate
        - The long-term fertility of the soil
        - Enhancing genetic biodiversity and increasing yields
        - A non-toxic environment
        - Having high animal welfare standards and enhancing animal welfare
        - Being beneficial to pollinators

        - Reducing climate and environmental footprint
        - Prohibited and restricted use of pesticides and fertilisers
    - **Organic farmer benefits** (Likert scale 1-5; 1 – "I fully disagree" – 5 "I fully agree")
        - Encouraging conventional farmers to turn into organics is an important priority
        - Strengthening the farmer's position in the food supply chain is an important priority
        - I am in favour of the European Union continuing to provide subsidy payments to farmers who carry out agricultural practices beneficial to the climate and the environment.
        - Income support for organic farmers should increase over the next ten years

- Sustainable food processing & distribution
    - **Benefits of shorter distribution channels** (Likert scale 1-5; 1 – "I fully disagree" – 5 "I fully agree")
        - Short supply chains are an important factor when I am purchasing my food
        - Food that is produced in a manner that respects local tradition and 'know-how' is important factor when I am purchasing my food
        - Food that comes from a known geographical area is important factor when I am purchasing my food
        - I would be willing to purchase seasonal products and not have all ingredients available all the time

- Sustainable food consumption
    - Purchasing power
        - How much money do you spend monthly on organic products? (Single choice – "Select one from the following")
            - 0-25€

- 26-50€
- 51-75€
- 76-100€
- 101-150€
- More than 150€

- How much more are you willing to pay for agricultural products that are produced in a way that limits their carbon footprint? (Single choice – „Select one from the following“)
  - I am not prepared to pay more
  - Up to 10% more
  - Up to 20% more
  - Up to 40% more
  - Up to 60% more
  - Up to 85% more
  - Up to a 100% more
  - More than a 100%
- Which of the following products you purchase usually are organic products? (Multiple choice – Threshold of 9/13 – 70%)
  - Eggs
  - Milk
  - Yoghurt
  - Butter
  - Cheese
  - Fruit
  - Vegetables

- Bread and grains
- Fish
- Meat (Poultry, pork and beef)
- Honey
- Snack foods
- Beverages

- Where do you do your shopping (Multiple choice – "Select any that apply")
  - Supermarkets
  - Mini markets
  - Farmers markets
  - Delivery
- From where do you obtain information on food risk? (Multiple choice – "Select any that apply")
  - Television
  - Local grocers
  - Farmers
  - Supermarkets
  - Restaurants
- Which of these two factors are more important for you when buying food? (Single choice – "Select one that applies")
  - Food safety
  - Ethics and beliefs

- Organic logo (Likert scale 1-5; 1 – "I fully disagree" – 5 "I fully agree")
  - It is important to me that food bears a label that guarantees quality

        - I am aware of EU quality labels and EU organic farming logo

            - I am aware of what the EU quality labels and EU organic farming logo stand for (How the product is being produced)

- Personal information
    - Age
    - Gender (Female, male, diverse)
    - Highest completed education
    - Geographical location (City you are living in)
    - Awareness of Farm to Fork
        - What is your perception of the Farm to Fork strategy (Likert scale 1-5; 1 – "I fully disagree" – 5 "I fully agree")
    - I have a positive attitude towards organically produced products (Likert scale 1-5; 1 – "I fully disagree" – 5 "I fully agree")
    - I believe that when purchasing organic products, I am expressing my desired identity (Likert scale 1-5; 1 – "I fully disagree" – 5 "I fully agree")