

Lindner, Max

## Article

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# Sustainable Food Consumption of German Millennials: Exploring the "Attitude Behavior Gap"

Max Lindner

Ludwig-Maximilians-Universität München

## Abstract

This thesis picked up on the recent trend of sustainability and sustainable development by investigating the sustainable food consumption of German Millennials regarding an assumed gap between their attitude and their actual consumer behavior. Based on the Theory of Planned Behavior, a multi-step, qualitative research process was developed in order to find explanations for the attitude behavior gap. The process triangulated data from questioning ten German Millennial consumers via qualitative interviews, observing these consumers during a regular grocery shopping trip and analyzing the products they bought. The study revealed the following barriers preventing the participants from consuming according to their attitude: price, lack of knowledge on part of the consumers, insufficient sustainable product ranges, consumers minimizing the time spent for grocery shopping, habitualized purchase decisions and in exceptional cases a desire for unsustainable products. Accordingly, recommendations were derived for sustainable food manufacturers and supermarket chains, public policy and consumers. Additionally, this thesis contributes to consumer research on the attitude behavior gap as well as on behavioral research by applying and extending the Theory of Planned Behavior.

**Keywords:** Sustainable consumption; attitude behavior gap; consumer behavior; food consumption Verbal Protocol Analysis; Theory of Planned Behavior.

## 1. Introduction

### 1.1. Relevance and Scope

#### *The Need for Sustainable Development and Sustainable Consumption*

The world faces multiple environmental problems like drastic changes in weather patterns or an increased number of natural disasters, mostly caused by men due to the emission of greenhouse gases (GHG), especially carbon dioxide (CO<sub>2</sub>). Pollution through manufacturing, deforesting and more environmentally harmful activities increased the CO<sub>2</sub> concentration by more than 33 percent (Trudel, 2019). Despite various counteractions, the mass of CO<sub>2</sub> emitted is far from declining. The worldwide annual emissions went up by 2.13% from 35.81 million tons in 2017 to 36.57 million tons in 2018 (Global Carbon Project, 2019). Besides environmental problems, other issues like preserving health or fighting poverty get more and more important (Bernynte, 2018).

In this context, sustainable development is gaining more and more attention. It was first popularized in 1987 by

the World Commission on Environment and Development (WCED) when they published "Our common future", also known as the "Brundtland Report" (Atapattu, 2019). In that report, the WCED acknowledged that both environmental protection and economic development were important, as they claim poverty is the biggest polluter and economic development is necessary for developing countries to improve the living standards of their people. Therefore, sustainable development was defined as a "development that meets the needs of the current generation while not comprising the needs of future generations" (Brundtland, Khalid, Agnelli, Al-Athel, & Chidzero, 1987, n.p.).

More recently the initiative of the Sustainable Development Goals was introduced in 2012 by the United Nations (UN). These goals are globally acknowledged and were officially adopted by the different states in 2015 (Hák, Janoušková, & Moldan, 2016; Sachs, 2012). The SDGs look beyond narrow economic measures of progress and consider all aspects of well-being for current and future generations, especially regarding the environment but also to eradicate

poverty worldwide and to safeguard the planet (United Nations, 2015). Since then, sustainable development is defined in more detail by the 17 SDGs shown in figure 1. Each one of them is addressing another current challenge, however, they are integrated and indivisibly connected (Atapattu, 2019; Hák et al., 2016).

Integrating the three main and interlinked dimensions of economic, social, and environmental development, sustainable development has become the center of a renewed development framework for countries to meet the changing development priorities and gaps that previous strategies have been unable to close (Verma, Petersen, & Lansford, 2019).

According to Hanss, Böhm, Doran, and Homburg (2016), there is a common census that besides institutions and profit-driven firms, also single individuals have some responsibility to contribute to sustainable development by consuming sustainably. Luczka and Smoluk-Sikorska (2017) even state that this sustainable consumption is one of the main elements of sustainable development. The United Nations, n.d.-b even formulated one specific SDG about consumption, which shows its high relevance.

#### *The Apparent Gap Between Attitude and Behavior Regarding Sustainable Consumption*

Consumer awareness regarding sustainability has grown over the past years and sustainability gets more and more important in the academic literature (Carrigan, Szmigin, & Wright, 2004; Connolly & Shaw, 2006; Dutta, 2014; Wei, Chiang, Kou, & Lee, 2017; Wiederhold & Martinez, 2018). Ellen, Wiener, and Cobb-Walgreen (1991) point out that consumers' environmental concerns and the awareness that their own actions impact directly the environment drive sustainable attitude. Wei et al. (2017) also state that consumers are aware that their buying behavior and consumption patterns have an impact on environmental problems like pollution and climate change. According to Bellmann and Koch (2019), more than 50% of the questioned companies state ecological sustainability as important or even (very) important in their business activity. On the other hand, more than 60% of private consumers in Germany claimed to have changed their consumer behavior due to ecological concerns (Boyon, 2020). This indicates that many people hold a positive attitude towards sustainability and sustainable consumption.

Despite the consumers' awareness and interest in environmental as well as in social challenges and a resulting positive attitude, this does not always lead to sustainable behavior, captured by actual purchase decisions in this context. Prothero et al. (2011) claim that even though 40% of consumers are willing to buy environmentally friendly, only 4% actually do so. Recent literature has already picked up on these diverging observations, indicating the existence of this gap for different products and geographical locations (K. Lee, 2008; Moraes, Carrigan, & Szmigin, 2012; Wiederhold & Martinez, 2018; Young, Hwang, McDonald, & Oates, 2010).

#### *General Differences in Consumer Behavior*

Prior literature suggests that consumers of different nations and therefore different cultural backgrounds show considerable differences in consumer behavior (Gentina, Butori,

Rose, & Bakir, 2014; Gómez-Luciano, de Aguiar, Vriesekoop, & Urbano, 2019; Kacen & Lee, 2002; Lapierre & Rozendaal, 2018; Manrai, 2018). For example, Gentina et al. (2014) state that susceptibility to peer influence drives teenage consumer shopping in the Netherlands, while in the USA it is additionally motivated by the need for uniqueness. Another example is the work of Gómez-Luciano et al. (2019), which suggests that countries from higher economically developed countries tended to show more readiness to replace traditional meats with alternatives.

In the context of the thesis, it is sensible to choose Germany as the focus country, as Germany has the fourth-largest Gross Domestic Product worldwide which shows its enormous economic relevance (World Population Review, 2019). Additionally, sustainability has high relevance for the German government (Bundesregierung, 2019) as well as for the public and population, which makes it a sensible country to look at in the context of sustainable development (Umweltbundesamt, 2017, 2019a). Furthermore, the researcher is based in Germany and can easily access German interviewees, probands, or respondents.

Similar to the national and cultural background, the generational affiliation seems to influence consumer behavior, as suggested by current literature (Bulut, Kökalan Çimrin, & Doğan, 2017; Miller & Washington, 2019; Priporas, Stylos, & Fotiadis, 2017; Southgate, 2017). Therefore, it is reasonable to focus on one generational group. Members of Generation Y, also called Millennials, are said to have a more environmentally friendly attitude than older generations (Bedard & Tolmie, 2018) as they are the first consumers to grow up in a globally interdependent world (Bucic, Harris, & Arli, 2012). Furthermore, their presence in the workforce and their spending power rises (The Nielson Company, 2015).

#### *The Food Industry's Major Role in Sustainable Consumption*

The German food industry covers the production and processing of all kinds of food and beverages<sup>1</sup> and is a major part of the economy (Bundesministerium für Wirtschaft und Energie, 2019). The mostly small and medium-sized 6,119 companies in the industry employ 608,553 people and generated a revenue of 179.6 billion Euro in 2018 (+0% growth from 2017). That means that every seventh industrial company in Germany is producing food, employing 9.5% of all employed persons in Germany. Furthermore, Germany is the third-largest exporter of food worldwide with an export ratio of 33.5% (Bundesverband der deutschen Ernährungsindustrie, 2019).

On the other hand, the production and consumption of food are responsible for 20% to 30% of the environmental impacts in Germany (Umweltbundesamt, 2013). According to Grünberg, Nieberg, and Schmidt (2010), emissions for the food industry in Germany, including processing, transport and distribution, comprises about 16% to 22% of the total emissions of GHGs. Osterburg et al. (2009) state that other authors attribute between 14% and 22% of the emissions to

<sup>1</sup>See the appendix section A1.2 for a detailed overview of the German food industry.



(United Nations, n.d.-b)

**Figure 1:** Overview of the 17 Sustainable Development Goals

the food industry. Tukker et al. (2006) claim that food and drink cause 20% to 30% of the various environmental impacts of private consumption (in the EU). In a more recent investigation, the World-Resource-Institute (2016) estimates that the total food chain impact on GHGs emissions is 25% to 30% (worldwide).

The environmental impacts include not only GHGs but also other environmental pollutants. They acidify the soil or water or destroy the ozone layer. The production and processing of food also requires many resources. Water is of great importance to the food industry. Due to the processing steps and hygiene requirements, the water demand in the food industry is high. Furthermore, wastewater from food manufacturing is often heavily polluted with organic substances. Also, the drying, cooking, and cooling of food is energy-intensive. This energy consumption burdens resources as well as the climate. Energy efficiency is therefore an important lever when implementing the best available technology (Umweltbundesamt, 2013).

Also, from a social aspect, the food industry is interesting. In recent years many big food manufacturers and retailers were involved in various scandals ranging from water exploitation in Africa (Handelsblatt, 2013) over violations of animal rights, contaminated food (PETA, 2019), and child labor (Flatley, 2019).

#### Summary

Due to various environmental and social challenges, sustainable development gained relevance in the last years. As a major lever for individual consumers, sustainable consumption gets more and more important as well. Even though consumer attitudes towards sustainability increases, it is not reflected in actual consumer behavior, indicating a gap. Closing this gap is of high relevance in the context of sustainable development. The food industry plays a major role, econom-

ically as well as ecologically and socially, so looking closer at that industry is sensible. Due to considerable differences in consumer attitude and behavior dependent on the national and cultural background as well as on the affiliation of a generational group it is promising to focus on a specific country and a specific generation. Reasonable choices for the country and the generation are Germany and the Millennials.

#### 1.2. Goal and Contribution

The goal of this thesis is to explore the gap between consumers' attitude and the behavior and to provide specific reasons respectively explanations for it. In doing so, this thesis contributes to the superior goal, which is closing the attitude behavior gap (ABG) and thereby fostering sustainable consumption. By providing insights regarding consumer behavior, implications for sustainable food manufacturers and supermarket chains (e.g. improving marketing and sales activities) and public policy (e.g. development of purposeful and effective regulations) can be derived as well as implications for the consumers themselves (e.g. revelation of unconscious beliefs).

Additionally, this thesis is also contributing to the current state of consumer research regarding the attitude behavior gap as well as to general behavioral research.

As implied by the previous section, this thesis is limited to the consumption of food and does not include the consumption of any other kind of product. Also, it is restricted to Germany, respectively German consumers and focuses only on the consumption behavior of Millennials. Therefore, citizens from other countries as well as consumers with a different generational affiliation are excluded.

So far, the consumer behavior of German Millennials regarding sustainable food consumption has not been investigated despite the market's enormous economic (Bundesmin-



isterium für Wirtschaft und Energie, 2019), environmental (Grünberg et al., 2010; Osterburg et al., 2009; Umweltbundesamt, 2013) and social relevance (Flatley, 2019; Handelsblatt, 2013; PETA, 2019).

Therefore, this thesis tries to examine the following research question:

How can the assumed attitude behavior gap regarding the sustainable food consumption of German Millennials be explained, respectively what are specific reasons for the gap?

### 1.3. Structure

To guide the reader through this thesis, it has been divided into six main parts. These parts contain several sections, which again contain chapters. In some cases, chapters are additionally divided into sub-chapters.

The first part introduces the overall topic and shows its great relevance in public discussion and research. The second part defines the basic concepts of this thesis like sustainable consumption as well as the German Millennials and sustainable food. After that, the Theory of Planned Behavior (TPB) is introduced as the guiding theory of this thesis explaining consumer behavior, before the second part is concluded with a summary and the resulting research question. The third part develops a detailed qualitative study design, triangulating qualitative interviews, observations, and the analysis of actual purchases, in order to examine the research question. This is followed by the part that presents and interprets the results of the study and afterwards the thesis is critically discussed, and limitations are examined in the fifth part. At last, the thesis is concluded with part six, which describes the theoretical contributions and possible further research and practical implications that can be derived. The structure of the thesis is displayed below in figure 2.

## 2. Conceptual Framework

### 2.1. Basic Concepts, Definitions, and Distinctions

This first section of this part defines the main concepts of this thesis as a foundation for the further process.

#### 2.1.1. Definition of Consumption

Consumption is a term that is commonly used in daily life and in academic literature, but it is used in a different context with different meanings (Stern, 1997). In the context of economics, it means spending funds for utility (Black, Hashimzade, & Myles, 2012; D'Orlando & Sanfilippo, 2010), while in biology it means eating and digesting other members of a food chain (Biology Dictionary, n.d.). The Cambridge Dictionary (2014) provides a rather practical and daily life definition for consumption: "the amount used or eaten", respectively "the act of using, eating, or drinking something". Another online dictionary confirms these definitions and adds one more particular definition: "the act of buying and using things" (Collins Cobuild, n.d.). From

a general consumers' perspective, consumption is defined as a three-stage process that involves purchasing, using, and disposing goods and/or services (Halkier, 2001; Kim et al., 2012; Stern, 2000).

This thesis deals with a specific form of consumption from a consumer's perspective, the consumption of food. Therefore, it is obvious that using definitions from economics, biology or other unrelated fields is not sensible and a consumer perspective's definition should be used. As this thesis aims to elicit insights about purchasing behavior, it is sensible to use a definition that also includes the act of purchasing. Therefore, in accordance with Collins Cobuild (n.d.); Halkier (2001); Kim et al. (2012); Stern (2000), the following definition is used for this thesis:

Consumption is the act of purchasing, using, and disposing goods.

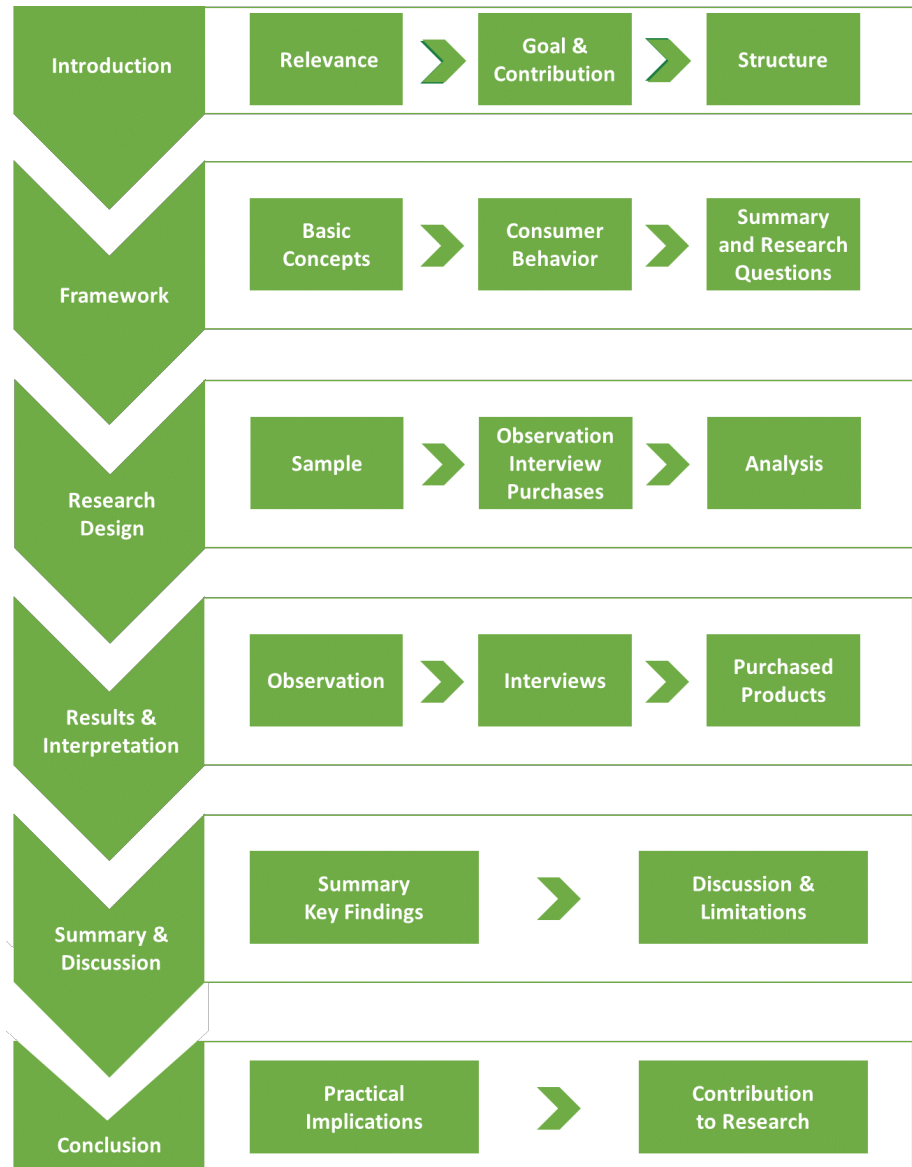
#### 2.1.2. Definition of Sustainable Consumption

In literature, there is no census regarding the definition of sustainable consumption. Even though definitions are similar, authors include different aspects according to Łuczka and Smoluk-Sikorska (2017). Some declare sustainable consumption as pro-environmental consumption (Brough, Wilkie, Ma, Isaac, & Gal, 2016; Chen, Ghosh, Liu, & Zhao, 2019), meaning the consumption of products that are produced in a way that reduces the environmental impact as much as possible. Others, like Łuczka & Smoluk-Sikorska, 2017 or Scott & Weaver, 2018, do also include social aspects, e.g. exclusion of particular social groups, fair trade, animal rights and so on. Often the term is used without clearly defining it (Luchs, Phipps, & Hill, 2015; Prothero et al., 2011).

#### *The UN's Definition of Sustainable Consumption*

While there is no census about the definition of sustainable consumption in academic literature, a definition can also be derived from the UN. In 1994, the Oslo Symposium, an initiative of the United Nations Conference on Environment that focused on sustainable consumption and production (Baker, 1996), firstly defined sustainable consumption as the use of products and services which respond to basic needs and improve the quality of life while minimizing the use of natural resources and toxic materials as well as waste and pollutants over the whole product or service life cycle. (Sustainable Development Knowledge Platform, n.d.).

Later, the UN formulated, as previously mentioned, one specific SDG about sustainable production and consumption. By doing so, the UN points out the strong link between them. In fact, sustainable consumption is nothing else than the consumption of sustainable products respectively products that result from sustainable production. Sustainable production aims at decoupling economic growth from environmental degradation, increasing resource efficiency, and promoting sustainable lifestyles by reducing future economic, environmental, and social costs. Therefore, sustainable consumption and production should contribute substantially to poverty alleviation and the transition towards low-carbon and green



Own representation

**Figure 2:** Structure of the thesis

economies (United Nations, n.d.-a; United Nations Environment Programme, 2015).

#### *Synthesized Definition for Sustainable Consumption*

The SDGs represent common goals for the members of the UN and were officially adopted by the different states in 2015 (Hák et al., 2016; Sachs, 2012). Therefore, they are a suitable basis for a definition. For this thesis, the following definition will be used:

Sustainable consumption is the consumption of products resulting from sustainable production. Sustainable production is a form of production that reduces environmental degradation, increases resource efficiency, and promotes sustainable lifestyles compared to conventional forms of production. Furthermore, it contributes

to Sustainable Development by benefitting one or more related SDGs. In summary sustainable production reduces future economic, environmental and social costs.

#### *Term Distinction*

A review of the academic literature shows that besides sustainable consumption similar forms of consumption are mentioned. Namely, these terms are “green consumption”, “responsible consumption” and “ethical consumption”. There is no general census about what aspects these different types of consumption cover (social or environmental aspects or both) and the terms are not properly differentiated. Therefore, a literature review<sup>2</sup> was conducted in order to distin-

<sup>2</sup>See the appendix section A.1.3 for the research strategy and additional

guish the different forms of consumption. As it is not the goal of this thesis to do a fully comprehensive literature review about sustainable consumption, it was done until the point at which the assessment of further papers was not likely to generate more fundamental insights, in accordance with the principle of theoretical saturation from grounded theory (Flick, 1991; Strauss, 1998). This point was reached when a total of 28 recent articles that deal with one of those forms of consumption were reviewed. The results are displayed in table 1.

Authors generally agree that “green consumption” only refers to environmental aspects (Amatulli et al., 2019; Johnstone & Hooper, 2016; Nguyen et al., 2019; Perera et al., 2018). Therefore, green consumption is a subpart of sustainable consumption.

Another term is “responsible consumption”. It is sometimes specified as “socially responsible consumption” (Robinot et al., 2017; Shobeiri et al., 2016) or “environmentally responsible consumption” (Gupta & Agrawal, 2018). However, that does not necessarily mean, that only the respective aspects are covered. Xu et al. (2019) deal with socially responsible consumption but also include environmental aspects. Authors that use the term responsible consumption without further specification mostly only consider social aspects (Antonetti & Maklan, 2015; Rasool et al., 2019) but some include environmental aspects as well (Kumar & Chamola, 2019). All in all, it can be concluded that responsible consumption rather focuses on social issues and is therefore a subpart of sustainable consumption. Furthermore, it is noticeable that the term in its unspecific form is used in articles that are not published in top tier journals (Kumar & Chamola, 2019; Rasool et al., 2019; Xu et al., 2019) especially if its unspecific form is used.

Numerous authors deal with “ethical consumption”. Most of them attribute social and environmental issues to it (Carington et al., 2016; Gummerus et al., 2017; Jung et al., 2016; H. Lee & Cheon, 2018; Shaw et al., 2016; Wiederhold & Martinez, 2018; Williams et al., 2015). This indicates that sustainable consumption (as defined earlier) and ethical consumption are equivalents regarding the covered aspects. Only one of the reviewed articles about ethical consumption deals with social aspects only (Govind et al., 2019).

Figure 3 graphically displays the relations of the different forms of consumption discussed in this chapter.

### 2.1.3. German Millennials

As mentioned in the first part, consumers of different nations and therefore different cultural backgrounds show considerable differences in consumer attitude and behavior (Gentina et al., 2014; Gómez-Luciano et al., 2019; Kacen & Lee, 2002; Lapierre & Rozendaal, 2018; Manrai, 2018). This thesis focuses on consumers that are born and raised in Germany.

Literature agrees regarding the general generational groups but does not really agree on the exact division regarding the year of birth (Wey Smola & Sutton, 2002). An exemplary summary of different divisions is displayed in table 2<sup>4</sup>.

Table 2 shows that the different divisions do not correspond 100% but are all very similar. For this thesis, the division of the Center of Generational Kinetics is used, as it is a specialized research institute that focuses on generational research and should therefore provide valid information.

Table 3 provides data of the German population divided into generational groups as defined by the Center for Generational Kinetics (2016). As children under ten years are assumed to play a minor role in purchasing decisions, this age group was left out. As well, people over 73 years were not considered as they only represent a small part of the population and will not be of major influence in the future.

As mentioned before, Millennials have a more eco-friendly attitude than older generations (Bedard & Tolmie, 2018) as they are the first consumers to grow up in a globally interdependent world (Bucic et al., 2012). Their presence in the workforce and their spending power is big (The Nielson Company, 2015), which is supported by the fact that they represent the second biggest generational group in Germany. Only the group of the Baby Boomers include more people, but their relevance fades due to their advancing age. As a result, German Millennials are all people that are born between 1977 and 1995 in Germany and were also raised in Germany.

### 2.1.4. Sustainable Food

There is a huge amount of different food products in the German market and some products are considered more sustainable than others. Table 4 provides an overview of the emitted GHG in gram per kg of the respective product.

These data allow to compare different products regarding their GHG emissions. However, emissions are not the only impact on the environment. The water consumption during the production process is as well important (BMU, 2016). Referring to the social aspect of sustainability, fair-traded products are said to be more sustainable than products from exploitation. This is especially important for imported products like bananas, cacao, or tea (BMU, 2016; Tegut, 2015). Regional products are said to be more sustainable than imported ones, as there are additional emissions as a result of transportation. This may not always be the case, for example, oversea ships can be more CO<sub>2</sub> efficient than truck transportation. Small decentralized processing structures also tend to be less energy efficient than large companies (Penker & Elmar, 2015). This illustrates how multi-layered and non-transparent sustainability is and that regionally produced products are not necessarily more sustainable than others. Even if that is not generalizable, it may

information regarding the research on sustainable consumption.

<sup>3</sup>Journal rank was obtained from Scimago Journal and Country Rank (<https://www.scimagojr.com/>) on 11.12.2019.

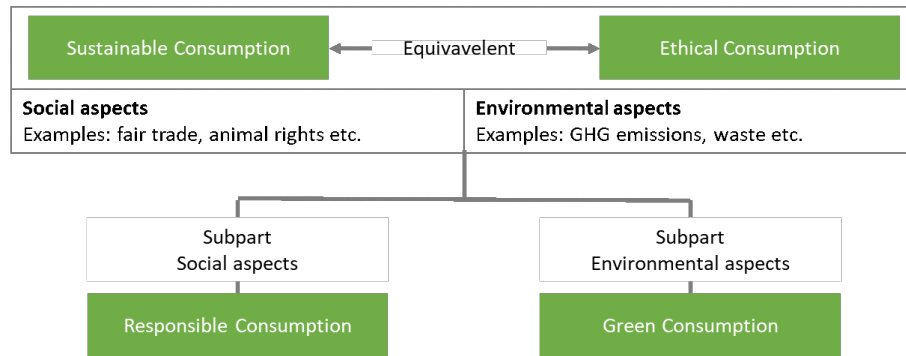
<sup>4</sup>See the appendix section A1.4 for the research strategy and additional information regarding German Millennials.

**Table 1:** Literature review of sustainable consumption and related forms of consumption

Kind of consumption	Covered aspects	References	Journal	Journal rank <sup>3</sup>
Sustainable	Environmental, Social	Prothero et al., 2011	Journal of public policy & marketing	Q1
Sustainable	Environmental	Chen et al., 2019	Journal of marketing research	Q1
Sustainable	Environmental, Social	Salciuviene, Buenaventura, & Lee, 2019	Engineering economics	Q2
Sustainable	Environmental, Social	Minton, Jeffrey Xie, Gurel-Atay, & Kahle, 2018	International journal of consumer studies	Q2
Sustainable	Environmental, Social	Scott & Weaver, 2018	Journal of public policy & marketing	Q1
Sustainable	Environmental	Brough et al., 2016	Journal of consumer research	Q1
Sustainable	Environmental, Social	Luchs et al., 2015	Journal of marketing management	Q1
Green	Environmental	Nguyen, Nguyen, & Hoang, 2019	Sustainable development	Q1
Green	Environmental	Amatulli, De Angelis, Peluso, Soscia, & Guido, 2019	Journal of business ethics	Q1
Green	Environmental	Perera, Auger, & Klein, 2018	Journal of business ethics	Q1
Green	Environmental	Johnstone & Hooper, 2016	Journal of marketing management	Q1
Responsible	Environmental, Social	Kumar & Chamola, 2019	Serbian journal of management	Q3
Responsible	Social	Rasool, Shakur, ani Mohammad, Mughal, & Awang, 2019	International journal of business & society	Q3
Socially Responsible	Social	Shobeiri, Rajaobelina, Durif, & Boivin, 2016	International journal of market research	Q1
Socially Responsible	Social	Robinot, Ertz, & Durif, 2017	International journal of consumer studies	Q2
Socially Responsible	Social	Song & Kim, 2018	Journal of business ethics	Q1
Socially Responsible	Environmental, Social	Xu, You, & Liu, 2019	Social behavior and personality	Q3
Environmentally Responsible	Environmental	Gupta & Agrawal, 2018	Corporate social responsibility and environmental management	Q1
Responsible	Social	Antonetti & Maklan, 2015	International journal of market research	Q1
Ethical	Environmental, Social	Hiller & Woodall, 2019	Journal of business ethics	Q1
Ethical	Social	Govind, Singh, Garg, & D'Silva, 2019	Journal of business ethics	Q1
Ethical	Environmental, Social	H. Lee & Cheon, 2018	Journal of international consumer marketing	Q2
Ethical	Environmental, Social	Gummerus, Liljander, & Sihlman, 2017	Journal of business ethics	Q1
Ethical	Environmental, Social	Carrington, Zwick, & Neville, 2016	Marketing theory	Q1
Ethical	Environmental, Social	Shaw, McMaster, & Newholm, 2016	Journal of business ethics	Q1
Ethical	Environmental, Social	Williams, Germov, Fuller, & Freij, 2015	Appetite	Q1
Ethical	Environmental, Social	Jung, Kim, & Oh, 2016	Journal of business ethics	Q1
Ethical	Environmental, Social	Wiederhold & Martinez, 2018	International journal of consumer studies	Q2

Own representation





Own representation

**Figure 3:** Different forms of consumption**Table 2:** Different divisions of generations depending on age

Reference	Baby Boomers	Generation X	Generation Y - Millennials	Generation Z
McCrindle and Wolfinger (2014)	1946 - 1964	1965 - 1979	1980 - 1994	1995 - 2009
Brühl (n.d.)	-1964	1965 - 1975	1976 - 1998	1999 -
Meredith and Schewe (1994)	1946 - 1964	1965 - 1979	1980 - 2000	
Center for Generational Kinetics (2016)	1946 - 1964	1965 - 1976	1977 - 1995	1997 - TBD

Own representation

**Table 3:** Generations overview

	Baby Boomers	Generation X	Generation Y - Millennials	Generation Z
Birth range	1946 - 1964	1965 - 1976	1977 - 1995	1996 - TBD
Age	73 - 55 years	54 - 43 years	24 - 42 years	23 - 10 years
Population in Germany	21.151.208	14.354.981	19.721.652	11.378.281

Own representation based on Statistisches Bundesamt (2019) and Center for Generational Kinetics (2016)

be true for a majority of cases (eKitchen, 2017; Moderne-Landwirtschaft, 2016). Therefore, this thesis will assume that regional products have a lower impact on transportation than others. Another important aspect is the packaging of the food, which is also multi-layered. A clear and general distinction of packaging in sustainable and not sustainable is not possible<sup>5</sup>, as various factors like packaging material, the durability of the goods, and others have to be taken into account (Emblem, 2012; Sonneveld, James, Fitzpatrick, & Lewis, 2005).

To sum it up, the ecological aspect of a food product's sustainability depends on several different factors. These can be subordinated to three main categories: the impact during production, the impact from transportation and packaging. Still, it is not sensible to try to generally distinguish the products in sustainable and unsustainable and this is also not the goal of this thesis. Instead of following a black and white logic, this thesis focuses more on relative sustainability. For example, table 4 allows to assume that meat has a higher

<sup>5</sup>See the appendix section A1.4 for a detailed research regarding sustainable packaging.

impact from production than vegetables. The table is displayed in an ascending order regarding their emissions (conventional agriculture). If the products are simply split into three approximately even groups, it results in the limit values regarding the CO<sub>2</sub> emissions as displayed in table 5.

Also, as previously described, the impact from transportation is lower if a product was produced regionally, than if it was produced at the other end of the country or even imported from another place in the world. Regarding packaging, it is impossible to determine which kind of packaging is more or less sustainable as extensive research showed<sup>6</sup>. The only sensible evaluation here is to distinguish between packed and unpacked products.

Furthermore, sustainable consumption also includes social aspects as described in chapter 2.1.2. In the further process of this thesis, the focus hereby lies on fair-trade and compliance with animal rights, as derived from the definition of sustainable consumption in chapter 2.1.2.

This thesis is especially aiming at exploring the attitude, thought processes, and beliefs regarding sustainable behavior.

<sup>6</sup>See the appendix section A1.4 for a detailed research regarding sustainable packaging.

**Table 4:** Greenhouse gas emissions of the respective product

Product	Conventional agriculture CO2 equivalent emission in g/kg	Ecological agriculture CO2 equivalent emission in g/kg
Vegetables fresh	153	130
potatoes fresh	199	138
Tomatoes	339	228
Vegetables frozen	415	378
Vegetables canned	511	479
White bread	661	553
Mixed bread	768	653
Pastry	919	770
Baked goods	938	838
Milk	940	883
Yoghurt	1,231	1,159
Beef	1,311	11,374
Curd/cream cheese	1,929	1,804
Eggs	1,931	1,542
Pork	3,252	3,039
Poultry	3,508	3,039
Potatoes dry	3,776	3,354
Pork frozen	4,282	4,069
Poultry frozen	4,538	4,069
Pommes-frites	5,728	5,568
Cream	7,631	7,106
Cheese	8,512	7,951
Beef frozen	14,341	12,402

Own representation based on (BMU, 2016)

**Table 5:** Impact dimensions and evaluation sheet

	Low impact (see table 4)	Medium impact	High impact
Impact from production	Up to 900 CO2 equivalent emission in g/kg	900 to 2,000 CO2 equivalent emission in g/kg	Over 2,000 CO2 equivalent emission in g/kg
Impact from transportation	Regional product	German product	Imported product
Impact from packaging	Unpacked product		Packed product

Own representation

ior. Therefore, it is not absolutely necessary to develop a valid and generalizable quantitative measure sustainability, but more what consumers perceive as sustainability and for example what happens in their heads when choosing a product, they perceive as less sustainable as available alternatives. Therefore, in the process of this work, “sustainable product” or “unsustainable products” respectively products that are “more” or “less” sustainable than others, refer to the people’s perception of the sustainability of these products and not to the evaluation sheet developed in this chapter. The developed sheet will only be used in the later process of this thesis in order to evaluate the actual purchase behavior of the participants.

## 2.2. Consumer Behavior

In the following section, the Theory of Planned Behavior (TPB) is described as the guiding theoretical framework for this thesis explaining the behavior of consumers.

The TPB is said to be the most popular theory to explain human behavior (Astrøm & Rise, 2001; Dean, Raats, & Shepherd, 2012). It has been successfully applied in various different areas of behavior, ranging from health behavior (Astrøm & Rise, 2001) to career choices (Moore & Burrus, 2019). More relevant for this thesis is its applicability for purchasing behavior (Ramayah, Lee, & Lim, 2012), sustainable behavior (Kaiser, Wölfling, & Fuhrer, 1999) and sustainable consumption (Hameed, Waris, & ul Haq, 2019; Robinot

et al., 2017; Sparks & Shepherd, 1992) and most important food consumption (Carfora et al., 2019; Dean et al., 2012; Schmidt, 2019; Shepherd & Raats, 1996; Shin, Im, Jung, & Severt, 2018; Sparks, Hedderley, & Shepherd, 1992; Testa, Sarti, & Frey, 2019). Especially when examining the relationship between attitude and behavior the TPB is the most widely researched theory (Armitage & Conner, 2001). Therefore, the TPB is selected as frame for this thesis. The reviewed references that recommend respectively use the TPB are displayed below in table 6.

As the TPB was created as an extension of the Theory of Reasoned Action (TRA) (Ajzen, 1991), both theories will be explained in the following chapters. The section will be concluded by a chapter examining diverging observations that emerged from prior literature having used the TRA and the TPB to explain consumer behavior.

### 2.2.1. The Theory of Reasoned Action

The development of the TRA was started by Martin Fishbein in the late 1960s. In previous decades, psychology failed to provide consistent findings about the correlation between attitude and behavior (Rossmann, 2011). Fishbein (1967) tried to solve that problem by (1) considering only a limited set of variables as determinants for behavior and (2) review of the relationships between determinant and traditional attitudinal measures (Rossmann, 2011). In that context, Fishbein (1967) formulated a goal and premises for a theory he called “theory of behavioral prediction” which became the TRA later (Rossmann, 2011).

#### *Introduction to the Theory of Reasoned Action*

The following subchapter is intended to give a broad overview of the TRA, its basic premises, and the general logic of the theory.

##### *Basic Premises*

There are two basic premises that have to be given for the TRA to be valid (Fishbein & Ajzen, 1980):

1. A rational thinking and acting human, that anticipates the meaning of his/her actions in consideration of all available information before deciding to behave in a certain way
2. The behavior to be evaluated is under deliberate control of the respective human

In fact, if people do not deal at all with their intentions and consequences of their behavior (e.g. automated behavior, manifested habits, addictive or aggressive behavior) or if they are not able to put their behavior into practice, the TRA reaches its limits (Fishbein & Ajzen, 1980; Rossmann, 2011).

##### *Basic Model*

If the two premises are given, the behavior can be precisely prognosed from the intention. That means, that people do what they intend to do. The intention is dependent on

two determinants, the attitude towards the respective behavior and the social pressure or subjective norm that a person feels (Fishbein & Ajzen, 1980).

The relative importance of attitude and subjective norm depends in part on the intention under investigation. For some intentions, attitudinal considerations may be more important than normative considerations, for other intentions it may be vice versa. Additionally, the importance of the two determinants of intention can vary from person to person (Fishbein & Ajzen, 1980).

According to Fishbein and Ajzen (1980) attitudes are a function of beliefs. In simplified terms that means, a person who believes that performing a given behavior will lead to mostly positive outcomes will hold a favorable attitude toward performing the behavior and a person believing that the behavior will result in negative outcomes will hold an unfavorable attitude. These underlying beliefs are called behavioral beliefs.

Like attitudes, subjective norms are functions of beliefs as well, but a different form of beliefs. Rather than beliefs about the outcome of the behavior, these so-called normative beliefs are about whether specific individuals or groups think he/she should perform the behavior. In simplified terms that means, a person who believes that most people with whom he wants to comply, think he should perform a given behavior will lead him to feel the social pressure to do so. Again, it is vice versa if the person believes that the respective people think he should not perform the behavior (Fishbein & Ajzen, 1980).

Figure 4 summarizes the principle of the theory, how the behavior of a person can be traced back to that person's beliefs.

The following subchapters will each deal with one of the components (behavior, intention, attitude, subjective norm) of the theory, explaining them in detail, starting with the behavior, and then working through the model as displayed in figure 4 from right to left.

#### *Behavior*

##### *Single Actions and Behavioral Categories*

Fishbein and Ajzen (1980) state that it is important to distinguish single actions from behavioral categories. A single act is a specific behavior performed by an individual. To be able to measure a single action, it must be defined clearly enough to determine whether it has been performed or not. That may be easy for some actions like e.g. if attending church. For other actions however it may be very hard to determine if that person did really listen to what the priest said (Fishbein & Ajzen, 1980).

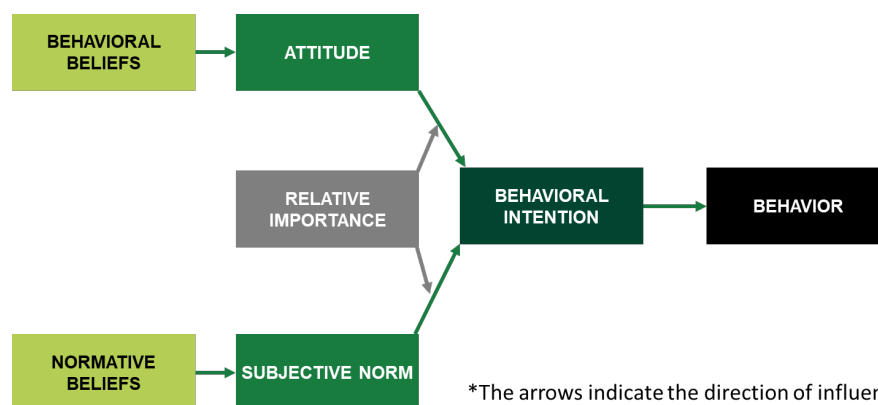
A behavioral category involves more than one single action. It can refer to a relatively narrow range of actions, like e.g. dieting or exercising or to a broader range like health maintenance or recreational activity. Behavioral categories cannot be observed directly. Instead, they are inferred from single actions, that are assumed to be instances of the general behavioral category (Fishbein & Ajzen, 1980). So e.g. exercising is inferred from the single actions of running, doing

<sup>7</sup>Journal rank was obtained from Scimago Journal and Country Rank (<https://www.scimagojr.com/>) on 24.01.2020.

**Table 6:** Overview of articles using the Theory of Planned Behavior

Type of behavior	Reference	Journal	Journal Ranking <sup>7</sup>
General behavior	Armitage and Conner (2001)	British journal of social psychology	Q1
Sustainable behavior	Kaiser et al. (1999)	Journal of environmental psychology	Q1
Ethical behavior	Wiederhold and Martinez (2018)	International journal of consumer studies	Q2
Socially responsible behavior	Han and Stoel (2017)	Journal of international consumer marketing	Q2
Internet usage	Rana, Slade, Kitching, and Dwivedi (2019)	Computers in human behavior	Q1
Health behavior	Astrøm and Rise (2001)	Psychology and health	Q1
Gambling behavior	Procter, Angus, Blaszczyński, and Gainsbury (2019)	Addictive behaviors	Q1
Career behavior	Moore and Burrus (2019)	The career development quarterly	Q2
General consumption	Kim, Ham, Yang, and Choi (2013)	International journal of hospitality management	Q1
General consumption	Johnstone and Tan (2015)	Journal of business ethics	Q1
General Consumption	Ramayah et al. (2012)	Journal of environmental management	Q1
Sustainable consumption	Hameed et al. (2019)	Environmental science and pollution research	Q1
Sustainable consumption	Robinot et al. (2017)	International journal of consumer studies	Q2
Green consumption	Sparks et al. (1992)	Social psychology quarterly	Q1
Food consumption	Sparks and Shepherd (1992)	European journal of social psychology	Q1
Food consumption	Dean et al. (2012)	Journal of applied social psychology	Q2
Food consumption	Schmidt (2019)	Food quality and preference	Q1
Food Consumption	Carfora et al. (2019)	Food quality and preference	Q1
Food Consumption	Testa et al. (2019)	Business strategy and the environment	Q1
Food Consumption	Shin et al. (2018)	International journal of hospitality management	Q1
Coffee consumption	Van der Merwe and Maree (2016)	International journal of consumer studies	Q2
Wine consumption	Maksan, Kovačić, and Cerjak (2019)	Appetite	Q1

Own representation



Own representation based on Fishbein and Ajzen (1980)

**Figure 4:** Factors determining a person's behavior

crunches, and doing push-ups.

Because a general behavioral category consists of many different single actions, the observation of only one or two of them will not provide an adequate measure of the respective

category. On the one hand, this is because the observation of one or two single actions is simply a sample, which is too small, but on the other hand, the particular actions alone that are selected may not be valid indicators of the intended cat-



egory. For example, it is not clear if drinking coffee without sugar is a valid indication of dieting, as many people drink coffee without sugar, just because they like it that way. To be able to adequately measure a behavioral category it is necessary to observe a whole set of single actions and combine these measures to arrive at a general measure (Fishbein & Ajzen, 1980).

#### *Behavioral Elements: Action, Target, Context and Time*

Besides the action or actions themselves, it is important to consider the target at which a behavior is directed. The target is the aspect that is to be measured from a certain action e.g. if the particular person drinks beer or not. It can be also more specific like if this person drinks a certain brand of beer. These two examples demonstrate how different the measures can be depending on the target. As well the context is important, as it might make a difference if a person drinks beer at a bar or at home. Similarly, the time is important as it might also make a difference if someone drinks a beer in the evening or during the day (Fishbein & Ajzen, 1980).

#### *Self-reported Behavior*

Some behavior is not directly observable, which is why it might be necessary to rely on the actor's self-report. Usually, self-reports regarding behavior are quite accurate, but their accuracy cannot be taken for granted. There are no clear guidelines for the decision about the accuracy of a self-report, but they may be inadequate if there are strong reasons to suspect their inaccuracy. If self-reports can be used, they have some advantages over observations. Obviously, they require less effort, time, and money. However, it is not an adequate measure to ask a person directly whether she engaged in a behavioral category (e.g. dieting) as different people might have different understandings of the respective behavioral category. Here as well, a specific set of single actions has to be defined previously and the person of interest has to report his behavior regarding these specific actions. Similar to the procedure for direct observations, these data are then used to construct an index of the behavioral category (Fishbein & Ajzen, 1980).

#### *Intention*

##### *Definition of Intention*

The intention is defined as "a person's location on a subjective probability dimension involving a relation between him and some action" (Fishbein & Ajzen, 1975, n.p.), or in other words the behavioral intention is a measure of the likelihood that a person will engage in a certain behavior. According to the TRA, the intention is the immediate determinant of a person's behavior (Fishbein & Ajzen, 1980).

##### *Determinants of Intention*

As described before, Fishbein and Ajzen (1980) claim that behavioral intention is determined by (1) a personal attitude and (2) a social norm. In most instances, personal attitude and subjective norm are in agreement and the prediction of intention is relatively straightforward. Sometimes, however, both determinants may not be in agreement. If that is the case, the relative importance of the two determinants is highly relevant. This relative importance is dependent on the

kind of behavior in general as well as the elements of behavior. A variation of action, target, context, or time might result in a different weighting of attitude and subjective norm. For example, for competitive behaviors, the attitude is more important and for cooperative behaviors, the subjective norm is more important (Fishbein & Ajzen, 1980).

Besides, Fishbein and Ajzen (1980) also indicate that individual or external factors influence the relative importance of the two determinants. These individual differences include demographic variables like age or sex, personality traits like introversion or extroversion, and many others. Ideally, the relative importance of attitude and the subjective norm would be available for each individual. It is important to notice that Fishbein and Ajzen (1980) state, that a person's own report does not provide satisfactory estimates. The relative importance can be estimated by performing a multiple regression analysis, the standardized regression coefficients can then be used as estimates.

#### *Attitude*

##### *Definition of Attitude*

The attitude is "a person's location on a bipolar evaluative or affective dimension with respect to some object, action, or event" (Fishbein & Ajzen, 1975, n.p.). In other words, this means that the attitude toward an object, action or event is simply a person's general feeling of favorableness or unfavorableness for that object, action, or event (Fishbein & Ajzen, 1980). It is important to mention that the TRA only refers to attitudes regarding behavior. It does not include traditional attitudes toward e.g. people or institutions (Fishbein & Ajzen, 1980). To be more accurate, the attitude refers specifically to the person's own performance of the behavior rather than the performance in general. E.g. a woman might be generally in favor of using birth control pills but as she is trying to become pregnant she will not intend to use such pills (Fishbein & Ajzen, 1980).

##### *Determinants of Attitude*

The attitude toward a behavior is determined by beliefs about outcomes of that behavior also called behavioral beliefs. Those beliefs are formed by a person's experiences. They may be the result of direct observation, the acceptance of information from outside sources, or the self-generation through inference processes. Some of the beliefs may persist over time while others may change, and new beliefs form. A person may hold a variety of beliefs, but the actual attitude is formed by only a small number (five to nine) of them, the so-called salient beliefs. However, it is also possible for more than nine beliefs to be salient and therefore determine a person's attitude. In any case, it is a limited number of beliefs that are salient, but it is impossible to determine with any precision the exact number. As the salient beliefs are the most present ones in a person's mind, it can be assumed that the first beliefs that a person emits are the salient ones. If a person believes a behavior to result in positive outcomes, she will acquire a positive attitude toward the behavior and vice versa (Fishbein & Ajzen, 1980). To sum up, the attitude towards a behavior is acquired automatically and simultane-

ously based on the salient beliefs (Fishbein & Ajzen, 1975).

### *Subjective Norm*

#### *Definition of the Subjective Norm*

The subjective norm deals with the influence of the social environment on intentions and behavior. In easier terms, it means a person's perception that most people who are important to her think she should or should not perform a certain behavior. The more a person perceives that these other people think she should perform a behavior, the more she will intend to do so, and vice versa (Fishbein & Ajzen, 1980).

#### *Determinants of the Subjective Norm*

The subjective norm is determined by normative beliefs. As described previously, that does not mean what the person herself thinks about the behavior in question but what she believes her social environment opinion is. Of course, not everybody that is in contact with the person is important, but only some salient referents. Eliciting these salient referents is the first step in assessing the subjective norm.

Additionally, the general motivation to comply is important, as a person might weight the opinions of her referents differently. For example, regarding the previously mentioned use of birth control pills, a person will probably have a higher motivation to comply with her husband than with her friend.

In sum, subjective norms are based on the set of salient normative beliefs, each weighted by the motivation to comply (Fishbein & Ajzen, 1980).

### *The Complete Model of the Theory of Reasoned Action*

The behavior of a person can be explained and predicted from her behavioral intention. This intention in turn is determined by the attitude and subjective norm. These two factors might be weighted differently which plays an important role in determining the intention. This relative importance can be influenced by external factors like demographic variables (e.g. age or sex), attitudes (not toward the behavior in question but related people or institutions), or individual personality traits.

The attitude is determined by salient beliefs about the outcomes of the behavior and how the person evaluates these outcomes as well as how likely she thinks that outcome is (belief strength). The outcome evaluation and the belief strength can as well be influenced by the previously mentioned external factors.

The subjective norm is comprised of the beliefs that the salient referents (the most important social contacts) think the person should do regarding the behavior in question and the general motivation to comply with these referents. These beliefs and motivations can also be influenced by the external factors. The complete model of the TRA is displayed in figure 5.

It is important to stress, that the described external factors do not necessarily influence the determinants. The relations specified within the theory, however (unbroken lines in figure 5), are always assumed to hold (Fishbein & Ajzen, 1980).

### 2.2.2. Theory of Planned Behavior

The TPB was introduced in 1985 by Ajzen (1985) as an extension of the TRA and soon empirically tested (Ajzen & Madden, 1986; Schifter & Ajzen, 1985). The theory is explicitly explained in a later work of Ajzen (1991) and compared to the related TRA by Madden, Ellen, and Ajzen (1992).

The TRA is limited as it requires people to have direct volitional control over the behavior in question. Therefore, it fails to explain behaviors for which this is not the case (Ajzen, 1991). The main difference between the TRA and the TPB is that the latter includes a third component that, additionally to subjective norm and attitude, influences behavioral intentions (Rossmann, 2011). This third component is called the Perceived Behavioral Control (PBC). By adding this component, the second limitation of the TRA is lifted so that the TPB can also handle behaviors that are not under complete control (Ajzen, 1988). Other than that, the TPB works the same way as the TRA (Rossmann, 2011).

The following sub-chapter explains in detail the perceived behavior control component. After that, an extension of the TPB is introduced until the chapter is concluded with a critical view on the TPB.

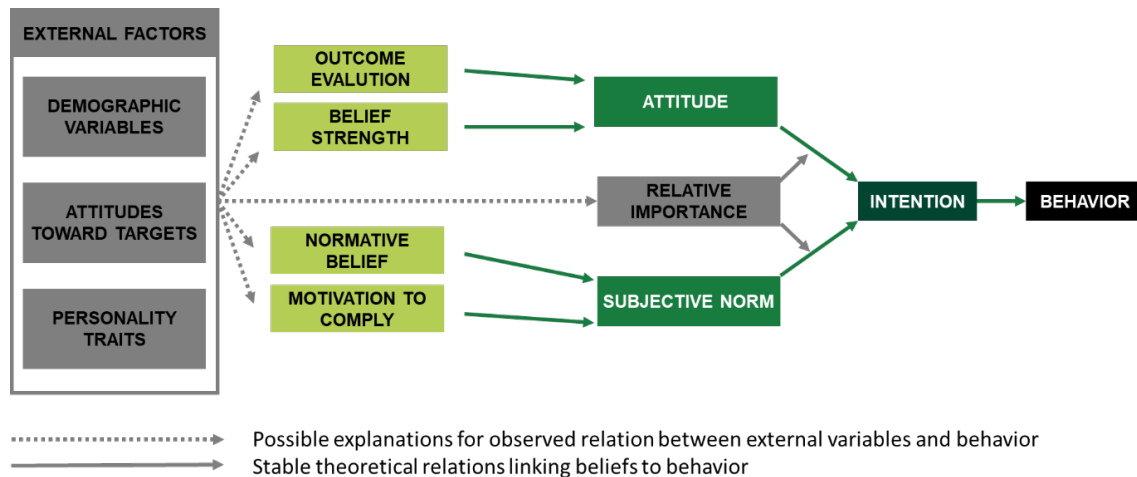
### *Perceived Behavioral Control*

#### *Definition of perceived behavior control*

Many characteristics of an individual can influence the successful performance of a behavior. These include information, skills, and abilities but also the power of will, emotions, and compulsions. In addition, also external obstacles or circumstances can interfere with the performance of any behavior (Schifter & Ajzen, 1985). These factors collectively represent people's actual control or lack of control over the behavior (Ajzen, 1988). Most of these factors cannot or only partially be guessed in advance, let alone be measured. The individually perceived control of individuals over their actions is rather what these individuals think about their control than what it actually is. Whether a measure of perceived control can be used as a substitute for actual behavioral control is dependent on the accuracy of the perceptions. This accuracy is determined by the information a person has about the behavior, changes in requirements, or available resources, or the occurrence of new and unfamiliar elements (Ajzen, 1991). Basically, that means that if a person is familiar with a respective behavior e.g. because she has performed it numerous times before, the accuracy of her perception is higher respectively realistic. If the perception really is realistic, the PBC reflects the actual behavioral control quite well (Ajzen, 1985, 1988). Additionally, the PBC is quite easy to measure, as it can just be self-reported by the person in question (Rossmann, 2011).

#### *Determinants of perceived behavior control*

Similar to the attitude and the subjective norm, the PBC is also determined by beliefs, the so-called control beliefs (Ajzen, 1988). These are beliefs about what factors influence the actual execution of a behavior and how strong this influence is. These beliefs are mostly based on personal ex-



Own representation based on Fishbein and Ajzen (1980)

**Figure 5:** Complete model of the Theory of Reasoned Action

periences, experiences of the social environment, or other internal or external factors (Rossmann, 2011).

Also similar to the attitude and the subjective norm the salient beliefs are especially important in order to understand the PBC. For a single individual, it is likely that the first five to nine emitted factors are the salient ones (Ajzen, 1988). In a second step, these factors are evaluated regarding the probability that they will actually prevent the performance of the behavior in question (Ajzen & Madden, 1986).

Another approach is the direct assessment of the PBC without dealing with the detailed underlying beliefs. This can be done e.g. by asking the person about how she perceives her control about a certain behavior on just another 7-point-scale (Ajzen & Madden, 1986).

#### *Influence of perceived behavior control*

The PBC can influence the behavior in two different ways, either indirectly or directly (Madden et al., 1992). The indirect influence is based on the assumed influence on the behavioral intention. According to Ajzen (1988), this effect is not mediated by attitude or subjective norm. If a person thinks that they are not able to perform a given behavior, their intention to do so will likely be lower, even though subjective norm and attitude foster that behavior. E.g. the lacking use of Facebook among elder people is not necessarily a consequence of a negative attitude or a lacking social pressure, but simply their conviction not to be technically skilled enough for the use of such networks (Rossmann, 2011). Figure 6 provides a basic model of the TPB and indicates the influence of the PBC.

The direct influence reflects the actual and not the PBC in case a given behavior is in fact not controllable by a person. This influence only emerges if the PBC is realistic and does reflect the actual behavioral control (Ajzen, 1988). If e.g. a person wants to register to Facebook, but the internet connection is currently not working, this is a factor that cannot willingly be influenced by that person but has a direct impact on the performance of the behavior (Rossmann, 2011).

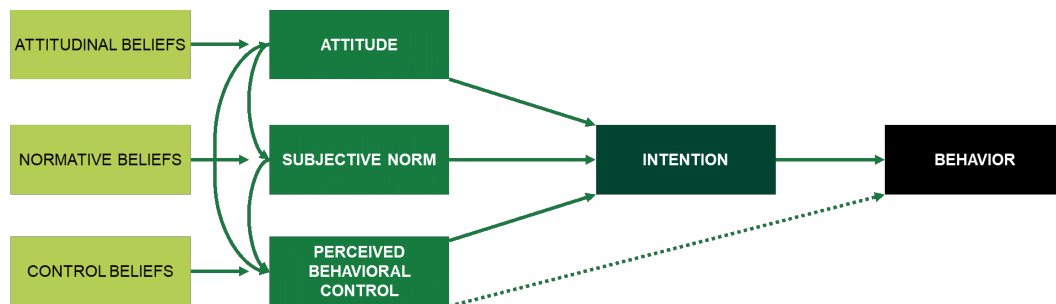
In figure 6 this possible influence is displayed as a broken arrow.

#### *Self-efficacy as Additional Determinant*

Ajzen, 2002 states that the term “perceived behavioral control” could be misleading and should be interpreted as perceived control over the performance of behavior. Put in this way, it can be seen, that PBC captures an individual’s perception of their ability to perform a behavior, which is a product of the environment surrounding the individual. A related concept is the self-efficacy, that captures the perceived ability to perform the desired behavior (Bandura & Walters, 1977). Behavior and choices are also impacted by self-efficacy according to Bandura (1986). Self-efficacy and PBC can reflect both internal and external factors, and the extent to which they reflect one or the other is an empirical question. Parkinson, David, and Rundle-Thiele (2017) argue that self-efficacy primarily reflects internal factors, whereas PBC focuses rather on external factors. Previous studies have used the terms PBC and self-efficacy interchangeably (Bui, Droms, & Craciun, 2014). However, more research identifies them as separate constructs (Rhodes & Courneya, 2003; Yap & Lee, 2013).

Ajzen (1991) defined PBC as the individual perception of how easy or hard it is to perform a behavior, and the presence or absence of resources and opportunities to do it. However, other authors have argued that control over performing a behavior is different from how difficult people perceive the performance of the respective behavior (Chan & Fishbein, 1993; Sparks, Guthrie, & Shepherd, 1997). Therefore, PBC in this thesis is defined as the extent to which the performance of the behavior is up to the individual, describing external obstacles (Ajzen, 2002).

The perceived ease or difficulty of performing a behavior itself, given opportunity and resources is defined as self-efficacy, which is based on self-efficacy expectancy, which is the individual conviction that one is able to successfully per-



Own representation based on Ajzen, 1991

**Figure 6:** Basic model of the Theory of Planned Behavior

form a respective behavior and therefore describing internal obstacles (Bandura & Walters, 1977). Ajzen (2002) argues that carefully selected items should be used for both self-efficacy and PBC to ensure high-internal consistency. Therefore, self-efficacy will be added as an additional determinant of intention and behavior in the framework of this thesis. The model of a modified TBP that will be the theoretical foundation of this thesis is illustrated in figure 7.

To achieve better clarity, the arrows depicting the mutually influencing relations between the four determinants (Ajzen, 1991) were removed.

#### *Status Quo and Critical View on the Theory of Planned Behavior*

Despite being well established and applied countless times, the theory is claimed to have some weaknesses as well. Its biggest one is probably the fact that it assumes behavior to be rational and conscious. This neglects spontaneous behavior or strong emotional influence (Jones, 1996; Rossmann, 2011).

Furthermore, some critics question the completeness of the components as past behavior is not included, which means that habitualization respectively repeated behavior is neglected (Jones, 1996; Klöckner & Blöbaum, 2010; Rossmann, 2011). Ajzen (2005) himself states that the TPB is also valid for habitualized behavior, as it was once triggered by a conscious decision and therefore relies on the same cognition as not-habitualized behavior. Other psychologists like Gollwitzer (1999) or Ouellette and Wood (1998) rather assume that habitualized behavior works without any cognitive participation. As findings on the applicability of TPB to habitual behavior are not consistent, the problem cannot be solved empirically at the moment (Rossmann, 2011).

Additionally, the meta-analytic review of Armitage and Conner (2001) states that the fact that the TPB often relies on self-reported behavior makes it vulnerable to self-presentational biases (Gaes, Kalle, & Tedeschi, 1978).

Jonas and Doll (1996) criticize the conceptualization of behavior as a singular act, as the TPB was originally designed to predict singular, observable behavioral acts. More complex behaviors including many single acts, behavioral outcomes, and goals cannot be explained by the TPB in the same manner

respectively only with poorer validity.

According to Rossmann (2011), it is a further weakness of the theory that it does not clearly distinguish PBC and self-efficacy. However, this was already discussed and solved by the introduction of self-efficacy as the fourth determinant of intentions in the previous chapter.

Another weakness as described by Jonas and Doll (1996) and Wirth, Von Pape, and Karnowski (2008) is the fact that the interplay of the components of the TPB only represents a limited time frame, which does not allow to follow the processual character of the relation of attitude and behavior. That is why some authors like Ouellette and Wood (1998) demand the inclusion of past behavior as a further determinant. Other authors like Wirth et al. (2008) suggest the introduction of a feedback loop between behavior and the three determinants in order to display the processual character.

The most important critic is the fact that many studies using the TPB are not able to prove the causality of the relations. Often the studies are based on cross-sectional analyses that identify all behavioral determinants and behavior at the same time. Strictly speaking, this means that it is not possible to clearly prove which of the determinants the cause of the behavior is. Even a reverse order, according to which the model components are a consequence of the behavior and not vice-versa, is possible in some cases (Rossmann, 2011).

The further critic is mostly centered on the operationalization of the components like e.g. the elicitation of the salient beliefs (Rossmann, 2011).

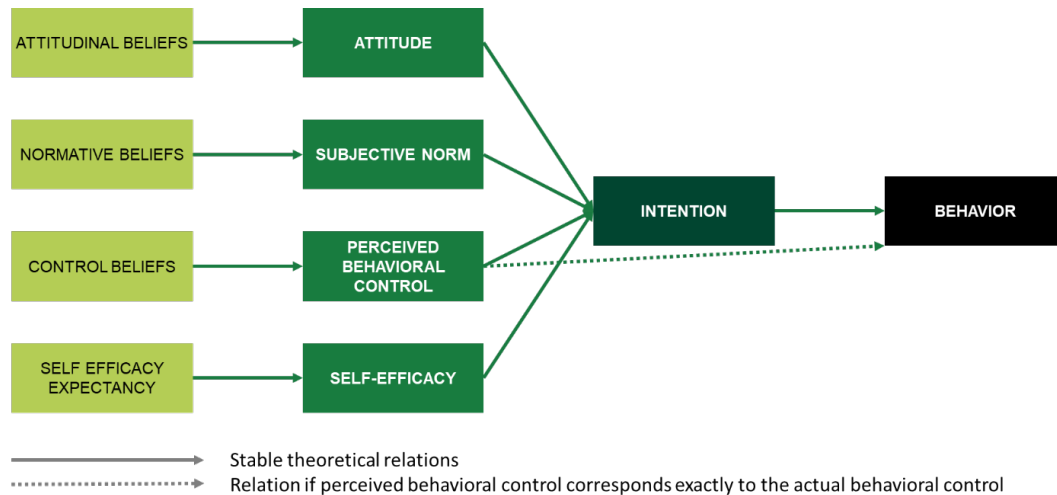
Despite the weaknesses the TPB may have according to the previously mentioned authors, the TPB is among the most widely researched (Armitage & Conner, 2001) and empirically proven theories explaining behavior (Rossmann, 2011) and has still been frequently used in the last years as explained at the beginning of section 2.2. Many studies since the 1960s confirm its assumptions and various meta analyses confirm its empirical validity (Armitage & Conner, 2001; Han & Stoel, 2017; Rossmann, 2011).

The weaknesses of the TPB are displayed below in table 7.

#### 2.2.3. Diverging Observations Regarding Consumer Behavior

As mentioned in the introduction, recent literature already picked up on discrepancies between certain determi-





Own representation based on (Ajzen, 1991, 2002; Bandura & Walters, 1977; Parkinson et al., 2017)

**Figure 7:** Modified model of the Theory of Planned Behavior

**Table 7:** Overview of the weaknesses of the extended Theory of Planned Behavior

Weakness
Explaining irrational behavior
Explaining repeated / habitual behavior
Neglecting the processual character of the relation between attitude and behavior
Divergence between self-reported and actual behavior
Missing proof of causality of relations
Operationalization of determinants
Own representation

nants and the actual consumer behavior. Two forms of the discrepancies are mentioned frequently but must be distinguished. One form is describing a divergence between consumer attitude and actual behavior on the other form in describing a divergence between the intention and the actual behavior. In the following chapter, these two forms are defined and distinguished.

#### *The Attitude Behavior Gap and Related Concepts*

##### *Attitude Behavior Gap*

This thesis will subsume all terms describing the divergence between attitudes, values, concerns, opinions etc., and the actual behavior under the term ABG as derived from the TPB (Ajzen, 1991). This phenomenon is graphically shown in figure 8.

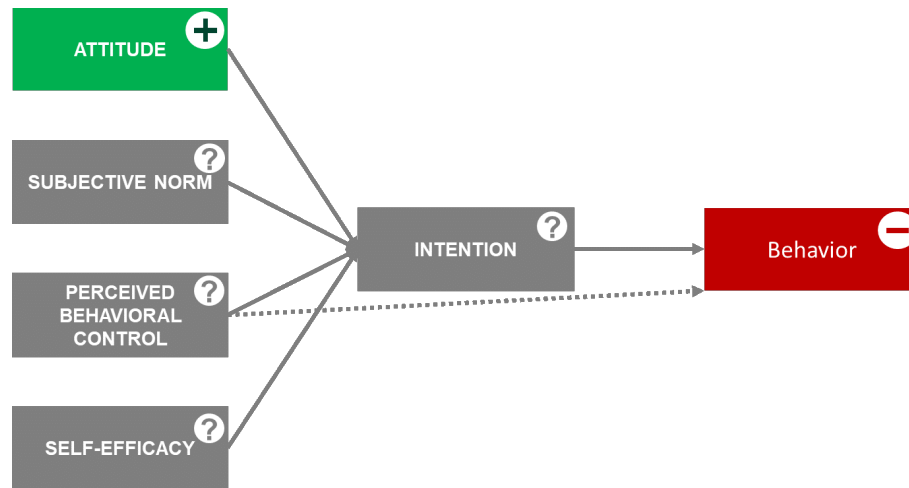
If attitude and behavior do not correspond, this divergence can be explained by the effect of an influence of the subjective norm, the PBC or the self-efficacy as it is not predefined what the intention is. For example, it could be possible that even though the attitude regarding a certain behavior is positive, the PBC and self-efficacy lead to a negative intention and a therefore a respective behavior, which is not corresponding to the attitude.

Other frequently mentioned terms describing the same

phenomenon, are the value action gap (Ferguson et al., 2017) or the concern behavior gap (Wei et al., 2017).

Academic literature indicates the existence of this gap for different industries and countries around the globe, like e.g. the wine market (Schäufele & Hamm, 2018) and the apparel industry (Wiederhold & Martinez, 2018) in Germany, the pork consumption in Brazil (de Barcellos, Krystallis, de Melo Saab, Kügler, & Grunert, 2011) or organic food consumption in Denmark (Aschemann-Witzel & Niebuhr Aagaard, 2014). Numerous other authors deal with the ABG, which is displayed in an overview in table 8.

The overall attitude in Germany regarding sustainability is positive according to a study done by the German federal office for environment. More than 60% of the Germans think protecting the environment is important (Umweltbundesamt, 2019b). As Millennials are said to have a more eco-friendly attitude than older generations (Bedard & Tolmie, 2018), it can be assumed that German Millennials also have a positive attitude regarding sustainability. On the other hand, the consumption of unsustainable food is not declining. The GHG emission due to food products was stable since the beginning of the millennial (Umweltbundesamt, 2020). Supporting that fact, the meat consumption in Germany has been stable during the last twenty years (Bundesanstalt für Land-



Own representation

**Figure 8:** The attitude behavior gap in the extended model of the Theory of Planned Behavior

wirtschaft und Ernährung, 2015; Ernährung, 2019) and the number of chickens kept in cages rose more than 30% in the last ten years (Statistisches Bundesamt, 2019). As these examples illustrate and the fact, that prior literature indicates the ABG for several other markets around the world and in Germany, it can be assumed that there is an ABG regarding the sustainable food consumption of German Millennials as well.

#### *Intention Behavior Gap*

In addition to the ABG, some authors also mention the intention behavior gap (Frank & Brock, 2018; Liu, Wang, & Koehler, 2019; Mack et al., 2019; Nguyen et al., 2019; Pfeffer, Englert, & Mueller-Alcazar, 2019) or the intention action gap (Gabler, Butler, & Adams, 2013; Holdershaw, Gendall, & Wright, 2011; Kersten, McCambridge, M. Kayes, Theadom, & McPherson, 2015; Kuo & Young, 2008; Saddawi-Konefka, Schumacher, Baker, Charnin, & Gollwitzer, 2016). The latter seems to apply especially in medical science. All gaps that describe a divergence between the intention and the behavior are labeled as intention behavior gap in the framework of this thesis. The attitude behavior gap and the intention behavior gap are displayed in figure 9.

The figure 9 compares the two gaps, which makes the difference between them obvious. The ABG allows the other determinants besides from the attitude to account for an intention that does not correspond to the attitude and therefore explain the ABG. The intention behavior gap neglects the determinants of intention as it presumes it to be, for example, positive. Thus, the determinants cannot provide an explanation of the gap within the framework of the TPB and requires seeking explanations outside of the theory's logic.

The intention behavior gap can be a special case of the ABG if the attitude corresponds with the intention, but these two do not correspond with the behavior. In order to investigate the problem in a more holistic way, this thesis will investigate the ABG covering all the determinants of behavior.

#### *Findings on the Attitude Behavior Gap*

Some prior literature also aimed at qualitatively elaborating explanations for the ABG. Aschemann-Witzel and Niebuhr Aagaard (2014) examine the gap in the context of organic food products in for young consumers in Denmark and Wiederhold and Martinez (2018) look into the German green apparel industry. Explanation approaches include the price premium people cannot or do not want to pay (Aschemann-Witzel & Niebuhr Aagaard, 2014; Wiederhold & Martinez, 2018) and the availability of respective products (Aschemann-Witzel & Niebuhr Aagaard, 2014; Wiederhold & Martinez, 2018). While Wiederhold and Martinez (2018) identified a lack of knowledge regarding sustainability as a barrier, Aschemann-Witzel and Niebuhr Aagaard (2014) explicitly stated that a lack of knowledge regarding organic products is no barrier for the young Danish consumers. Wiederhold and Martinez (2018) also stated the missing transparency, consumers' inertia, and habits as explanations, factors that could also apply to other products than clothing.

#### 2.3. Summary

According to the TPB, consumer behavior is determined by the intention which is in turn defined by attitude, subjective norm, PBC (Ajzen, 1991), and self-efficacy (Ajzen, 1991, 2002; Bandura & Walters, 1977; Parkinson et al., 2017). Prior literature indicates a gap between the attitude and the actual behavior regarding sustainable consumption for different consumer groups and in different markets (K. Lee, 2008; Moraes et al., 2012; Nguyen et al., 2019; Wiederhold & Martinez, 2018; Young et al., 2010).

So far, the consumer behavior of German Millennials regarding sustainable food consumption has not been investigated despite the market's enormous economic (Bundesministerium für Wirtschaft und Energie, 2019), environmental (Grünberg et al., 2010; Osterburg et al., 2009; Umweltbundesamt, 2013) and social relevance (Flatley, 2019; Handelsblatt, 2013; PETA, 2019).

**Table 8:** Overview of different articles dealing with the attitude behavior gap

Gap	Focus	References	Journal	Journal rank
Attitude behavior gap	High-cost situations	Farjam, Nikolaychuk, and Bravo (2019)	Ecological economics	Q1
Attitude behavior gap	Usage of sustainable materials in private house building	Götze and Naderer (2019)	International journal of sustainable development & world ecology	Q1
Value action gap	Deforestation behaviors in Guatemala	Robb, Haggar, Lamboll, and Castellanos (2019)	Environmental conservation	Q1
Attitude behavior gap	Apparel industry in Germany	Wiederhold and Martinez (2018)	International journal of consumer studies	Q2
Attitude behavior gap	Wine consumption in Germany	Schäufele and Hamm (2018)	Food quality and preference	Q1
Attitude behavior gap	Social impact assessment	Grieco (2018)	Nonprofit management & leadership	Q1
Value action gap	Imitation of visible green Behavior	Babutsidze and Chai (2018)	Ecological economics	Q1
Concern behavior gap	Environmentally friendly behavior	Tam and Chan (2018)	Global environmental change	Q1
Attitude behavior gap	Environmental education	Redondo and Puelles (2017)	International research in geographical and environmental education	Q2
Attitude behavior gap	Responsible consumption	Antonetti and Maklan (2015)	International journal of market research	Q1
Attitude behavior gap	Food consumption in Denmark	Aschemann-Witzel and Niebuhr Aagaard (2014)	International journal of consumer studies	Q2
Attitude behavior gap	Sustainable tourism	Juvan and Dolnicar (2014)	Annals of tourism research	Q1
Attitude behavior gap	Consumption in the UK	Moraes et al. (2012)	Journal of marketing management	Q1
Attitude behavior gap	Pork consumption in Brazil	de Barcellos et al. (2011)	International journal of consumer studies	Q2
Attitude behavior gap	Consumption in the UK	Young et al. (2010)	Sustainable development	Q1
Value action gap	Sustainable energy	Flynn, Bellaby, and Ricci (2009)	Sociological review	Q1
Value action gap	Waste recycling in Hong Kong	Chung and Leung (2007)	Environmental management	Q1

Own representation

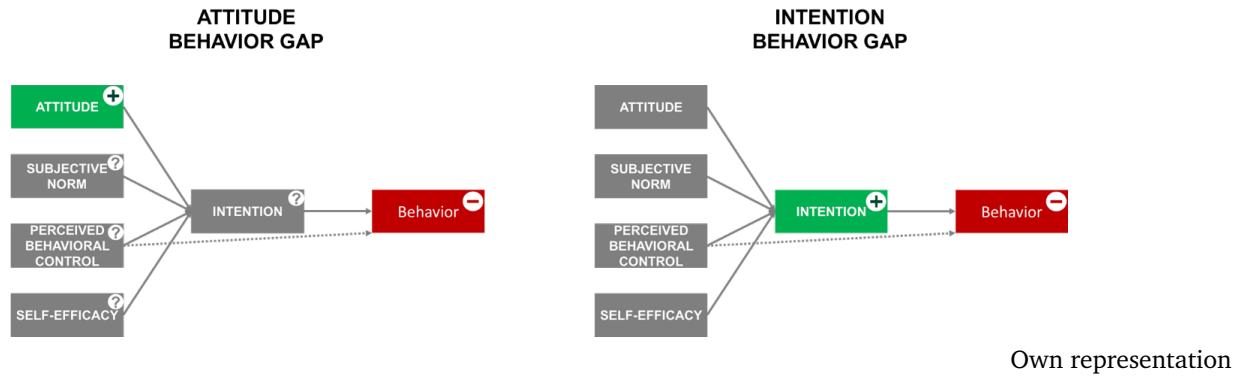
As described in the previous chapter 2.2.3 it can be assumed that there is an ABG regarding the sustainable food consumption of German Millennials as well.

As consumer behavior regarding various kinds of products is different (Pelau, 2011) it is sensible that also the reasons and explanations of the ABG regarding these kinds of products differ to the findings that prior works with similar research objects, like e.g. Wiederhold and Martinez (2018) elaborated. Thus, the following research question, as already stated in the introduction of this thesis, is to be examined:

How can the assumed attitude behavior gap regarding the sustainable food consumption of German Millennials be explained, respectively what are specific reasons for the gap?

### 3. Research Design

In order to investigate the research question, the assumed ABG must be deeply explored. Therefore, an exploratory qualitative approach was applied. It was especially important to explore specific detailed reasons that lead to a per-



**Figure 9:** Comparison of the attitude behavior gap and the intention behavior gap

son's respective attitude, subjective norm, or PBC down to the basic beliefs that underly these different determinants according to the TPB (Ajzen, 1988; Fishbein & Ajzen, 1980). To expose these non-obvious and sometimes even unconscious beliefs an explorative, qualitative research design was necessary (Flick, 2018; Giri & Biswas, 2019). In order to get valid and comprehensive data, the approach was triangulated by combining different methods (Bohnsack, Meuser, & Geimer, 2018; Flick, 2018).

In a first step, the participants will be observed during a shopping trip in order to get insights about their behavior when shopping groceries. In a subsequent step, their actual purchases are examined before they are interviewed. The arrangement of these three data collection steps is sensible. If the interview was made before the observation, participants may be encouraged to think about their consumer behavior which would be likely to bias their behavior during the observation.

### 3.1. Recruitment and Sample

The participants were eleven consumers born between 1977 and 1995 and raised in Germany. They are intended to represent the whole group of German Millennials which is why a balanced spread regarding age and education was achieved. All participants were contacted by phone and agreed to take part in the study which cumulated in a participation rate of 100%. This might be due to the fact that all participants were first or second-grade social contacts of the researcher. They were given background information about the overall study goal and a meeting with each participant was arranged at the supermarket where they most frequently shop for their food.

Recruitment, observation, and interviews took place in January and February 2020. Observation and interviews were made on the same day. Before starting the data collection, each of the participants was asked to sign a declaration of consent regarding the usage of the data.<sup>8</sup>

Additional background information like the demographic data of the participants are displayed in table 9.

Participant 6 was a special case, as she brought her two-year-old daughter along for the shopping trip as she usually does. All other participants were alone with the researcher.

### 3.2. Direct Observation and Verbal Protocol Analysis

In a first step, the participants were observed during their regular grocery shopping in order to capture their actual consumer behavior as well as body language and external factors while buying food and beverages. According to the Verbal Protocol Analysis (VPA) (Ericsson, 2006; Ericsson & Simon, 1985), also known as the "think out loud" method (Reicks et al., 2003), participants were asked to share their thoughts and considerations in order to capture them immediately during the shopping. Using only retrospective methods like interviews may have lead to a loss of those thoughts and considerations.

#### 3.2.1. Procedure

##### *Orientation Interview*

The researcher met the participants in front of the supermarket and gave them accurate and standardized instructions on the shopping protocol. After that, the researcher asked for circumstantial background information like the shopping list, the size of the household they are shopping for, or the available budget for today's shopping.

##### *The Observation - VPA*

After the orientation interview, the researcher walked with the participants who were asked to shop in their usual manner but, in addition, to verbalize all thoughts and considerations in the context of selecting the food and beverages. The researcher responded mostly to the participant by nonverbal signals to show that he was following the participant's thoughts and that he was interested, or by making a neutral comment. If the participant stopped speaking for a longer period (more than 60 seconds), the researcher used standardized non-leading sentences to encourage the monologue, such as "What are your thoughts?". In the standard VPA, the researcher does not respond to the participant's

<sup>8</sup>The declarations are available from the researcher on request.

<sup>9</sup>See appendix section A3.1 for additional information regarding the sample.



**Table 9:** Participants and additional information<sup>9</sup>

Proband No.	Gender	Birth year	Highest education	Current job	Household size	Urban(U) Rural (R)	Observation city	Observation shop
1	M	1993	Bachelor of Arts	Student	2	U	Munich Obergiesing	City Rewe
2	F	1978	Abitur	Foreign language correspondent	2	R	Pfaffenhofen	Lidl
3	F	1977	Vocational Training	Tax expert	2	R	Weissenhorn	Rewe
4	M	1991	Master of Eng.	Engineer	2	R	Senden	Lidl
5	M	1980	Vocational Training	Gas station owner	1	R	Pfaffenhofen	Rewe
6	F	1984	Vocational Training	Paralegal	4	R	Weissenhorn	Lidl
7	M	1994	Master of Science	Research Assistant	2	U	MunichSchwabing	Edeka Express
8	M	1990	Master of Science	Controller	2	U	Munich-Pasing	Lidl
9	M	1993	Bachelor of Arts	Student	1	U	Munich-Schwabing	Lidl
10	F	1984	Medical state examination	Physician	4	U	Munich Fürstenried	VollCorn Biomarkt

Own representation

questions or comments to avoid interrupting the process (Ericsson, 2006; Ericsson & Simon, 1985; Reicks et al., 2003). In an interactive, potentially busy, and loud environment, such as a supermarket, it is better to communicate with the accompanying person rather than to speak to oneself (Saarela et al., 2013).

#### *Immediate Feedback Interview and Debriefing*

Right after the shopping, short feedback interviews were conducted. The participants were asked general questions like “How did you feel about the shopping experience you just had? What was it like to think out loud?”. The participants were also given an opportunity to ask questions or address concerns.<sup>10</sup>

#### 3.2.2. Pretest

As pretest one observation was made prior to the actual data collection in order to test the applicability, completeness, comprehensibility, and quality of the research instrument (Raithel, 2008).

The pretest worked out fine. The participant stated he did not feel strange during the shopping trip, that he was instructed well and understood his task. As the participant did not keep the bill, reconstructing what he actually bought during the trip was rather time-consuming, as each product had to be recorded individually. As a result, the instruction

given to the participant prior to the start of the observation was expanded, adding the request to keep the bill. Apart from that, the pretest worked out well and nothing else was changed. The pretest was used as regular observation, making the pretest participant “Participant 1”.

#### 3.2.3. Data Collection

As mentioned in section 3.1 data was collected from eleven participants over the course of about six weeks. One researcher accompanied each participant to her most frequently visited supermarket. Shopping trips took between seven and 25 minutes. Prior to the actual trip, additional information about the participants and the circumstances of the shopping were elicited with a short interview (see chapter 3.1.1).

The verbal protocol of each participant was recorded with a cable bound and smartphone assisted microphone that was clipped to the collar of the respective participants. Thus, the protocol of each shopping trip is saved as one audio file which was later transcribed verbatim. At the same time, the researcher noted all observed behavior of the participants (which products did she look at, which did she put back, what did she actually buy, body language, striking or unusual behavior etc.). Additionally, the researcher noted external factors like special offers, sold-out products, crowded areas in the store etc.

During the observation the audio gear failed three times, resulting in either a complete stop of the audio record (Partic-

<sup>10</sup>See the appendix section A2.1 for the full observation guide, including instructions and the debriefing guide.

ipants 6 and Participant 8) or in a record of incomprehensible noise (Participant 7). In these cases, no verbal protocol could be recorded. However, in these cases a protocol was written on the same day of the observation from the memory of the researcher who accompanied and observed the participant, thus still ensuring rich insights in the participants shopping behavior.

The transcript of the verbal protocol as well as the notes from the observation were combined into one consolidated and comprehensive report per participant. These reports are a combination of two transcript forms introduced by Mayring (2016). From the audio file transcript, which was the result of the verbal protocol, a summary transcription is created. Mayring (2016) suggests reducing the quantity of information in order to improve the quality content. Then, based on the concept of the commented transcript (Mayring, 2016), the notes from the observation are added, thus creating the consolidated report.

### 3.3. Analysis of Actual Purchase Decisions

In a subsequent step, the actual purchase decisions of the participants were evaluated by either analyzing the bill from the shopping trip that was observed and/or the shopping cart and/or the food supply stored at participants home or in order to see what the participant actually purchased. It is important to mention that this part of the study was not the main focus of this thesis, but rather an additional analysis, enabling a rough crosscheck of the self-reported attitude and behavior stated by the participants during the interviews and their actual purchased products. Thus, the result of this analysis should be interpreted with care, as results might not be universally valid or generalizable. While the observation and the VPA focuses on the overall behavior and thoughts during the shopping trip, this analysis focuses on the actually purchased products.

According to the impact dimensions of food products identified in chapter 2.1.4, the purchased goods are examined on a high-level. Therefore, a photo is taken of the bill, the shopping cart, and/or the participants food storage, if it was feasible. Based on the photos a list of the purchased products is created, and each product is evaluated regarding the three impact dimensions scheme elaborated in chapter 2.1.4. as well as regarding fair trade and organic production. The aspect of compliance with animal rights is excluded from the analysis as it was impossible to evaluate the compliance for the products after they got purchased, solely on the basis of the photos.

#### *Impact from Production*

The products were evaluated regarding their GHG impact according to the table 4, as far as they could be found in it. Then they were classified based on the three impact levels provided in table 5 in chapter 2.1.4 and received a score (low impact = 1, medium impact = 2, high impact = 3). By calculating the average score per participant, a comparable evaluation regarding the impact from production was achieved.

#### *Impact from Transportation*

To evaluate the purchase decisions regarding the impact from transportation, the share of percentages explicitly marked as regional products will be calculated for each participant.

#### *Impact from Packaging*

As described in chapter 2.1.4, an evaluation of sustainable packaging is complicated and cannot be done superficially. Therefore, in order to superficially evaluate the purchase decisions, the percentage of unpackaged products for each participant is calculated.

#### *Fair Traded and Organic Products*

Finally, the percentage of fair-traded products as well as a percentage of organic products out of all products is calculated.

### 3.4. Semi-structured Interviews

In a last step, the participants were interviewed in order to investigate their attitudes, subjective norm, and PBC in more detail, as well as to pick up on striking behaviors during the grocery shopping. By specifically asking for underlying beliefs forming attitude, subjective norm, and PBC these determinants can be explained and understood. To uncover these underlying, potentially hidden or unconscious beliefs, a semi-structured depth interview is a suitable method (Flick, 2018; Giri & Biswas, 2019).

#### 3.4.1. Pretest

As pretest, one interview was done prior to the actual data collection in order to test the applicability, completeness, comprehensibility and quality of the research instrument (Raithel, 2008).

Again, the pretest was successful, and the participant gave a positive feedback. The interview generated a deep insight into the participant's attitude, subjective norm, PBC, and self-efficacy and provided some explanations for the ABG. However, it was often necessary to ask deeper questions and deviate from the key questions, as they mostly resulted in superficial answers. These deeper, detailed questions were noted and added to the interview guideline as examples. The pretest showed, that the interviewer needs to be flexible and adapt his questions if necessary, in order to unveil the hidden beliefs. However, the interview provided meaningful and purposeful insights, which is why it was used as a regular interview, so the pretest participant was "Participant 1".

#### 3.4.2. Data Collection

Similar to the observation, the data was collected by one investigator that interviewed the previously mentioned participants according to the interview guideline<sup>11</sup>. The guideline was split into five parts. The first part was rather introductory with general questions like, "what do you think is sustainable food consumption?" or "how often do you go grocery shopping?" in order to get the participant to start talking

<sup>11</sup>See the appendix section A2.2 for the full interview guide.

about their general shopping behavior. The other parts were developed in accordance with the structure of determinants as described in section 2.2. The second part aimed at eliciting the attitude of the respective participant by questioning the attitude itself as well as underlying beliefs. The third part covered the subjective norm, similar to the previous part, covering the determinant itself by asking questions like “Which people from your social environment influence your choice in groceries?” as well as underlying beliefs. The fourth part is about the PBC and self-efficacy, again addressing the determinants themselves and underlying beliefs. The last part is optional in case the data collected up to that point are not rich enough in the eyes of the researcher. The question of that part center on the ABG and how it could be counteracted or anticipated.

The interviews were recorded with the same recording technique used for the observations and transcribed verbatim as suggested by Mayring (2016).

### 3.5. Qualitative Data Analysis

The analysis process follows a slightly different order than the data collection process. Here, data from the qualitative interviews were analyzed first in order to see how participants self-reported their behavior and of course attitude, subjective norm, PBC, and self-efficacy. In the following, the combined transcripts from the observation and VPA were analyzed in order to see how they actually behave during grocery shopping and what their actual thoughts are. In a last step, the actual purchase decisions are analyzed in order to match these against the self-reported behavior from the qualitative interviews.

The analysis of the interview transcripts and the combined reports of the observations and the VPA follows the principle of qualitative content analysis by Mayring (2010). With the intention to identify and summarize objectively as well as systematically the content of the gathered data and to draw conclusions from it (Mayring, 2010). This bears the advantages of a structured approach by maintaining openness (Kohlbacher, 2006). Basically, the analysis consists of three process steps. The first step is called summary and reduces the material into a manageable scope by preserving the essential content. Afterwards, the explication step helps to clarify the content and the last process step is structuring. This describes the most important part of the qualitative analysis by coding the text excerpts into suitable categories (Kohlbacher, 2006; Mayring, 2010). Qualitative content analysis is a proven and suitable tool for analyzing data within qualitative research projects. Besides the previously mentioned advantages, it enables the integration of context and different material as well as the use of quantitative steps for the analysis (Kohlbacher, 2006). To manage all the gathered data in this research project the software MAXQDA and Microsoft Excel are used to facilitate the content analysis.

### 3.6. Overview: Triangulated Research Process

The whole research process is graphically illustrated in figure 10.

That research design guarantees a multiple triangulation. By using different sources respectively questioning different persons at different times in different locations, a data triangulation is given, ensuring an enhanced gain in information (Bohnsack et al., 2018; Flick, 2011). Furthermore, a methodological (between-method) triangulation results from the usage of observations as well as interviews.

## 4. Findings and Interpretation

This part presents the findings. This means at first the results of the qualitative interviews are introduced, followed by the results of the observation and the VPA and the results from the analysis of the actual purchased products. The last section combines the findings from the previous sections in order to examine the occurrence of the ABG and develop explanation approaches.

### 4.1. Findings from the Qualitative Interviews

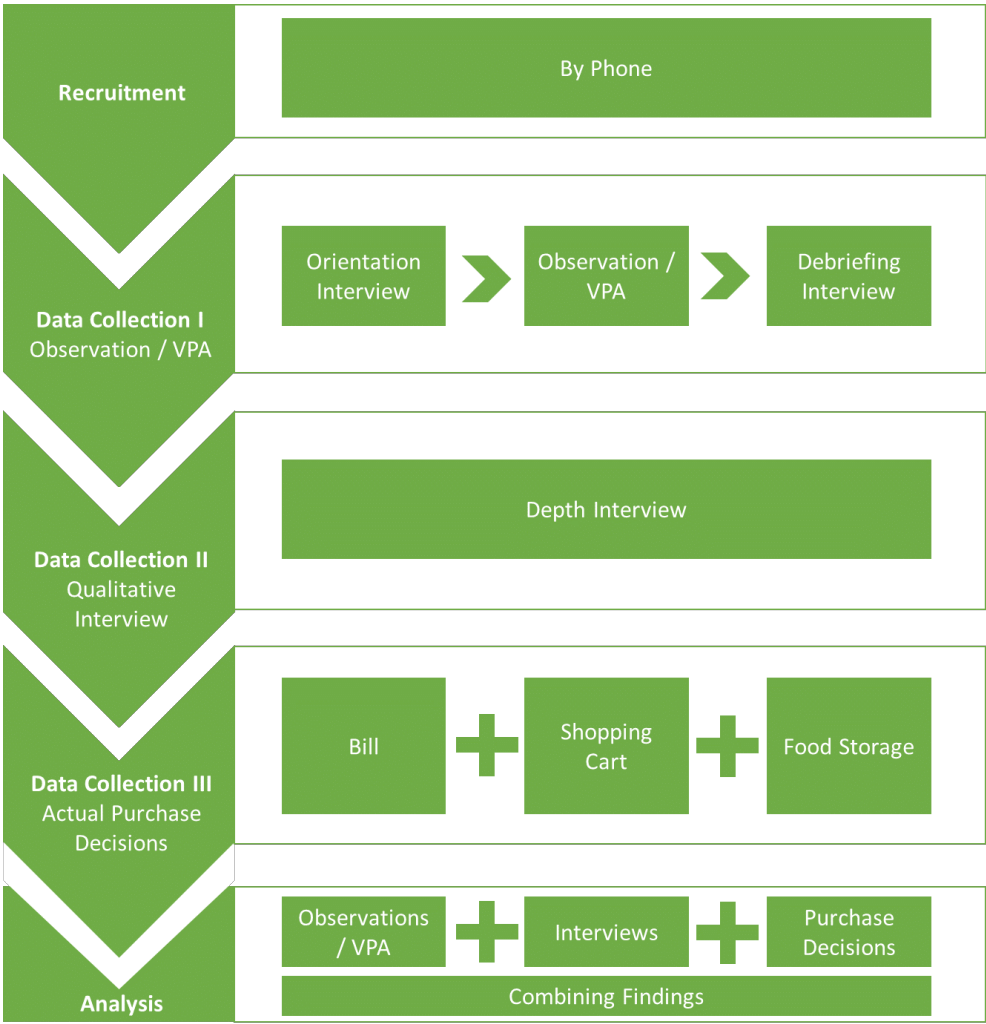
This section provides the findings of the qualitative interviews. At first, the general shopping behavior as self-reported by the participants is described. Subsequently, insights about the determinants of behavior according to the TPB are presented. The sources for the statements in that section are the interview transcripts with the respective participants. For example, the interview transcript of Participant 1 is shortened as “P1.I”.

#### 4.1.1. Findings from the General Shopping Behavior

Most of the participants stated that they do one big weekly grocery shopping trip and two additional smaller ones (P2.I; P3.I; P4.I; P6.I; P7.I; P10.I). The others indicated to do one (P3.I) or two (P1.I) trips per week. However, it seems like almost all participants do at least one bigger shopping trip per week.

Participant 1 and Participant 3 stated that they exclusively go grocery shopping in the evening after work when it is busy and sometimes some products are already sold out for the day (P1.I; P3.I). Participant 1 even said that this caused him to have a rather negative attitude regarding shopping in general and that he aims at getting over with the grocery shopping as fast as possible in order to only spend a minimum time in the store (P1.I). Participant 5 explained as well that he tries to minimize the time he is spending for grocery shopping (P5.I).

When it comes to choosing a store for their grocery shopping the biggest part of the participants named the proximity to their workplace respectively to their place of residence as one main driver (P1.I; P4.I; P5.I; P10.I). Other factors that were mentioned are the quality of the products (P4.I), the price compared to other stores (P9.I), the size of the product selection (P10.I) and the fact that some participants prefer to go to the same store every time because then they know exactly where to find which product, which increases shopping efficiency (P1.I; P5.I). This corresponds with the statements of Participant 1 and Participant 5 that they do not like grocery



Own representation

Figure 10: Triangulated research process

shopping and try to minimize the time they are spending for it, as previously mentioned (P1.I; P5.I).

The category scheme regarding general shopping behavior, providing an overview of the number of statements assignable to the respective category (n) as well as the total number of mentions (m) and the respective participants, is displayed below in table 10.

4.1.2. Attitude

Participants Evaluation of Attitude

It is striking that all participants, except for Participant 6, indicated to have a positive attitude regarding sustainable food consumption. While four participants (P1.I; P2.I; P3.I; P10.I) just stated a positive attitude, five participants (P5.I; P6.I; P7.I; P8.I; P9.I) added certain limitations to their positive attitude. For example, Participant 4 explained that even though

sustainability is important for him, his goal is not even to consume fully sustainably but he rather tries to improve his consumer behavior only in certain areas (P4.I). Participant 5 added that he does not want to overdo it with thinking about sustainable consumption, as eating and drinking is meant to be an enjoyment (P5.I).

Some participants explicitly pointed out that their consumer behavior got more sustainable in the last two to three years (P1.I; P3.I; P7.I). Participant 7 explained in that context that his personal transition to sustainable consumption was nothing that happened overnight, but he rather described it as a process that started more than two years ago. He has been trying to improve his ecological footprint but does not really have the ambition to be completely sustainable today (P7.I).

The reason for this change in attitude could be the fact that many participants (P3.I; P4.I; P6.I; P7.I) feel affected by the media. As sustainability is gaining more and more attention, participants are made to think about the topic and reflect their consumer behavior, which seemingly benefits a

<sup>12</sup>See the appendix section A4.2 to get access to the full coding scheme.



**Table 10:** Category scheme regarding general shopping behavior<sup>12</sup>

Main Category	Sub-category 1	Sub-category 2	Mentions		Participants
			n	m	
1 General shopping behavior	1.1 Reasons for the store choice	1.1.1 Large selection	1	1	P10.I
		1.1.2 Price	1	1	P9.I
		1.1.3 Proximity to work/place of residence	4	4	P1.I, P4.I, P5.I, P10.I
		1.1.4 Always the same shop (routine)	2	2	P1.I, P5.I
		1.1.5 Product quality	1	1	P4.I
	1.2 Negative attitude regarding shopping		2	6	P1.I, P5.I
	1.3 Shopping in the evening		2	2	P1.I, P3.I
	1.4 Number and kind of shopping trips	1.4.1 One per week	1	1	P3.I
		1.4.2 Two trips per week	1	1	P1.I
		1.4.3 One big trip plus two small trips per week	6	6	P2.I, P4.I, P6.I, P8.I, P9.I, P10.I
		1.4.4 Two - Three trips during the week, one big every two weeks	1	1	P7.I

Own representation

positive attitude regarding sustainable consumption.

Another explanation for an attitude change seems to be the birth of a child of one's own. The two participants, who are a parent, mentioned that the birth of their child had a great impact on their attitude (P6.I; P10.I). While Participant 10 stated the birth of her children had a positive influence on her attitude, as she wants to be a positive role model for her children regarding sustainable consumption (P10.I), Participant 6 explained that only with the birth of her children, she started thinking about what will happen to this world in the future and how she is influencing that (P6.I).

Even though most of the participants indicated to have a positive attitude, it is striking that half of the participants are currently not (yet) consuming as sustainable as they could and that they are aware of their potential for improvement.

Table 11 provides the category scheme regarding the participants' attitude evaluation, giving an overview of the number of statements assignable to the respective category (n) as well as the total number of mentions (m) and the respective participants.

### Underlying Beliefs

#### Understanding of Sustainable Consumption

When it comes to the underlying beliefs regarding the attitude, it is important to capture what people understand by sustainable food consumption. Therefore, the participants were asked to describe what sustainable food consumption means to them and what different aspects are covered by the term.

The most often mentioned aspect is the reduction of the consumption of products with excessive packaging especially if it is made out of plastic (P2.I; P3.I; P4.I; P5.I; P6.I; P7.I; P9.I; P10.I).

Almost as many participants mentioned the origin country of a food product as a determinant of sustainability. Regional products are perceived as more sustainable than products imported from foreign countries (P1.I; P2.I; P3.I; P4.I; P6.I; P7.I; P9.I; P10.I). The origin of products is related to another aspect that is frequently addressed by participants as an important part, namely the CO<sub>2</sub>-footprint. Consuming products with the lowest possible CO<sub>2</sub> emissions during production is seen as sustainable (P3.I; P6.I; P7.I; P8.I; P9.I). As

<sup>13</sup>See the appendix section A4.2 to get access to the full coding scheme.

**Table 11:** Category scheme regarding the attitude evaluation<sup>13</sup>

Main Category	Sub-category 1	Sub-category 2	Sub-category 3	Mentions		Participants
				n	m	
2 Attitude	2.1 Participants attitude evaluation	2.1.1 General	2.1.1.1 Positive attitude	5	5	P1.I, P2.I, P3.I, P10.I
			2.1.1.2 Limited positive attitude	5	8	P4.I, P5.I, P7.I, P8.I, P9.I
			2.1.1.3 Neutral attitude	1	1	P6.I
		2.1.2 Positive change in recent past		3	3	P1.I, P3.I, P7.I
			2.1.3 Change through own children	2	3	P6.I, P10.I
		2.1.4 Impact from media		4	6	P3.I, P4.I, P6.I, P7.I
			2.1.5 Aware of potential for improvement	5	5	P1.I, P2.I, P3.I, P7.I, P9.I

Own representation

the transport of products causes further CO<sub>2</sub> emissions it is only reasonable that imported products are considered less sustainable than regional products.

Also, participants frequently stated that reducing food waste is an important aspect of sustainable consumption (P1.I; P5.I; P6.I; P7.I; P9.I). This is connected to all the others as a reduction of food waste means fewer food products have to be manufactured, which is thereby influencing all other aspects.

Furthermore, it was striking that six out of ten participants stated that they had recently reduced (P2.I; P3.I; P4.I; P6.I; P7.I; P10.I) or even completely stopped their meat consumption (P1.I).

Additionally, many participants indicated to especially focus on consuming natural respectively organic products, partly as they believe organic products to be more sustainable than usual products and partly as they expect these products to be healthier than usual products (P1.I; P2.I; P4.I; P6.I; P7.I; P8.I; P9.I; P10.I).

Further issues that were only selectively mentioned by few participants are the decision to abstain from dairy products due to their high CO<sub>2</sub> emissions (P4.I), from products which required excessive quantity of water during production (P1.I; P7.I) and from products, which were produced under questionable circumstances regarding animal rights (P1.I; P8.I; P10.I). Some participants also claimed to specifically value fair traded products (P7.I; P8.I; P10.I).

The category scheme regarding the participants' understanding of sustainable food consumption, providing an overview of the number of statements assignable to the respective category (n) as well as the total number of mentions

(m) and the respective participants, is displayed below in table 12.

Participants identified many different aspects of sustainable food consumption. However, some of them can be backtracked to one basic aspect. The origin of the products is important because of the emissions of GHG resulting from transportation. Also, meat and dairy products reduced diet is often also tied to the fact that there are high emissions during the production of these products (see chapter 2.1.4), which allows to subsume it under the aspect of reducing the GHG impact from production. As the reduction of impact from packaging was also an aspect that was frequently mentioned by participants this leads to the same three impact dimensions identified in chapter 2.1.4. Also mentioned in that chapter were the aspects of fair-traded products and the compliance with animal rights, both of which were also mentioned by the participants. Additionally, the reduction of food waste and the reduction of unhealthy / inorganic products were brought up, ultimately leading to the following seven main aspects of sustainability as described by the participants:

1. Reduction of the GHG impact from production
2. Reduction of the GHG impact from transportation
3. Reduction of the impact from packaging
4. Reduction of the consumption of not fair-traded products
5. Reduction of the violation of animal rights
6. Reduction of food waste

<sup>14</sup>See the appendix section A4.2 to get access to the full coding scheme.

**Table 12:** Category scheme regarding the understanding of sustainable food consumption<sup>14</sup>

Main Category	Sub-category 1	Sub-category 2	Sub-category 3	Mentions		Participants
				n	m	
2 Attitude	2.2 Underlying beliefs	2.2.1 Understanding of Sustainable food consumption	2.2.1.1 Reduction of consumption of products with excessive packaging (especially plastic)	9	13	P1.I, P2.I, P3.I, P4.I, P5.I, P6.I, P7.I, P9.I, P10.I
			2.2.1.2 Regional origin of the products	8	13	P1.I, P2.I, P3.I, P4.I, P6.I, P7.I, P9.I, P10.I
			2.2.1.3 Abstinence from meat products	7	7	P1.I, P2.I, P3.I, P4.I, P6.I, P7.I, P9.I, P10.I
			2.2.1.4 Focus on naturally produced/ organic products	8	11	P1.I, P2.I, P4.I, P6.I, P7.I, P8.I, P9.I, P10.I
			2.2.1.5 Low CO2 footprint	5	8	P3.I, P6.I, P7.I, P8.I, P10.I
			2.2.1.6 Low food waste	5	6	P1.I, P5.I, P6.I, P7.I, P9.I
			2.2.1.7 Reduction of consumption of products violating animal rights	3	4	P7.I, P8.I, P10.I
			2.2.1.8 Reduction of consumption of products that are not fair traded	3	3	P7.I, P8.I, P10.I
			2.2.1.9 Reduction of the consumption of products with excessive water use	2	2	P1.I, P7.I
			2.2.1.10 Abstinence from dairy products	1	1	P4.I

Own representation

## 7. Reduction of unhealthy / inorganic products

### *Expected Consequences of Unsustainable Food Consumption*

In order to understand the attitudes of the participants better and why they formed, it is important to capture the consumers' expected consequences of engaging respectively not engaging in sustainable food consumption. Therefore, the participants were asked what consequences they expected if humanity keeps consuming unsustainably.

The participants mostly fear ecological consequences from unsustainable food consumption. The most mentioned consequence was a accelerated climate change (P1.I; P3.I; P4.I; P5.I; P6.I; P8.I; P9.I; P10.I). Furthermore, Participant 4 stated that he expects that "the primeval forests are being cut down even faster" (P4.I) and Participant 1 added his concern for the rainforest, which was also supported by the opinion of Participant 9 (P1.I; P9.I).

Another frequently mentioned expected consequence was the rising amount of trash and the environmental pollution (P4.I; P9.I; P10.I). Especially affected are the oceans by getting polluted with plastic according to Participant 4 (P4.I). Besides environmental effects, the participants also predict some humanitarian impacts. Participant 7 talked about possi-

ble streams of refugees (P7.I), while Participant 9 sees shortages in resources like food and water coming (P9.I).

Generally, a big part of the participants do not think that they will be directly affected by the variety of consequences (P4.I; P5.I; P7.I; P8.I). Participant 8 e.g. stated: "Personally, I think I'd come off pretty well" (P5.I, own translation), but adds that "the following generations would rather have a bigger problem" (P5.I, own translation), an opinion that participant 4 shares (P4.I). Participant 7 and Participant 8 rather expect other people to suffer from the consequences (P7.I; P8.I). Participant 7 mentioned that indigenous and African people will suffer from the rise in global temperature, especially from heat waves and from water shortages (P7.I). Participant 8 additionally mentions the inhabitant of island countries, whose islands are endangered by the rise in sea-level (P8.I). This could indeed result in refugee streams from these areas as previously mentioned.

Table 13 provides the category scheme regarding the expected consequences, giving an overview of the number of statements assignable to the respective category (n) as well as the total number of mentions (m) and the respective participants.

**Table 13:** Category scheme regarding expected consequences<sup>15</sup>

Main Category	Sub-category 1	Sub-category 2	Sub-category 3	Sub-category 4	Mentions		Participants
					n	m	
2 Attitude	2.2 Underlying beliefs	2.2.2 Expected consequences of unsustainable food consumption	2.2.2.1 Ecological consequences	2.2.2.1.1 Facilitating the climate change	8	8	P1.I, P3.I, P4.I, P5.I, P6.I, P8.I, P9.I, P10.I,
				2.2.2.1.2 Deforestation	3	3	P1.I, P4.I, P9.I
				2.2.2.1.3 Detoriation of air quality	1	1	P1.I
				2.2.2.1.4 Trash / pollution	3	4	P4.I, P9.I, P10.I
			2.2.2.2 Humanitarian consequences	2.2.2.2.1 Refugee streams	1	1	P7.I
				2.2.2.2.2 Resource shortage	1	2	P9.I
				2.2.2.3.1 No big impact on one-self	4	5	P4.I, P5.I, P7.I, P8.I
			2.2.2.3 Concerned people	2.2.2.3.2 Descendants will directly feel consequences	2	2	P4.I, P5.I
				2.2.2.3.3 Other peoples will feel the consequences	2	3	P7.I, P8.I

Own representation

In summary, the participants expect some serious consequences. However, the bigger part of them does not think to be heavily affected by these influences themselves. They rather expect the consequences to come at a later point in time, affecting only future generations. Also, they are convinced that it will affect African and island state peoples in particular.

#### *Scepticism and Negative Beliefs*

Some of the questioned people also talked about holding rather sceptical thoughts regarding sustainable food consumption. For example, Participants 5 and 8 think that the previously described consequences from unsustainable food consumption cannot be stopped (P5.I; P8.I), which may be related to the belief of some participants that not all people will take part in consuming sustainably (P2.I; P3.I; P5.I). One interviewee even stated that he is not entirely convinced of the current sustainability trend in general. He described himself as sceptical regarding “what is told, written and posted” (P5.I, own translation) by other people and the media (P5.I). Furthermore, he is also convinced that other countries are not as concerned about sustainability, especially when it comes to

plastic packaging, and “they are not living in another world” (P5.I, own translation).

The category scheme regarding skeptical and negative beliefs, providing an overview of the number of statements assignable to the respective category (n) as well as the total number of mentions (m) and the respective participants is displayed below in table 14.

#### 4.1.3. Subjective Norm

This chapter examines how the social environment of the participants influences them in their consumer behavior. Most of the interviewees said that they are positively influenced by their friends, respectively acquaintances of their own age, meaning other Millennials (P1.I; P2.I; P3.I; P4.I; P7.I; P8.I; P9.I; P10.I). Participant 4 said that he talks to his friends about necessary changes in consumer behavior (P4.I), while Participant 1 mentioned discussions with fellow students as a major influence (P1.I). Participant 10 explained how many of her friends tell her about their efforts regarding sustainability in general and how this incentivizes her to act accordingly (P10.I). Only one interviewee claimed to be

<sup>15</sup>See the appendix section A4.2 to get access to the full coding scheme.

<sup>16</sup>See the appendix section A4.2 to get access to the full coding scheme.

**Table 14:** Category scheme regarding skepticism and negative beliefs<sup>16</sup>

Main Category	Sub-category 1	Sub-category 2	Sub-category 3	Mentions		Participants
				n	m	
2 Attitude	2.2 Underlying beliefs	2.2.3 Scepticism and negative beliefs	2.2.3.1 Negative impacts cannot be stopped	2	2	P5.I, P8.I
			2.2.3.2 Not all people will participate	3	4	P2.I, P3.I, P5.I
			2.2.3.3 Sceptical about the sustainability trend in general	1	2	P5.I
			2.2.3.4 In other countries sustainability has no significance	1	1	P5.I

Own representation

negatively influenced by friends, stating that said she has to let herself “be nudged a little bit negatively” (P6.I, own translation).

The life partner seems to play an important role as four of the questioned persons mentioned that they are positively influenced by their partners (P1.I; P3.I; P6.I; P7.I). Participant 1 explained the fact that he became a vegetarian by the fact that his girlfriend had been a vegetarian before (P1.I). Similarly, Participant 7 is eating less meat and meat products as a result of his girlfriend not eating meat at all (P7.I). Even Participant 6, who claimed to have a rather neutral attitude regarding sustainable food consumption, stated that she is talking to her boyfriend a lot about consumption in general (P6.I). The fact that the life partner exerts a big influence makes a lot of sense, as many of the participants live together with them, so their food consumption is directly dependent on the partners’ opinion and consumer behavior.

The third important group of people who have an influence on the participants consumer behavior is the family. However, it is noticeable that the participants rather talked about a negative influence (P1.I; P6.I; P7.I; P8.I; P10.I). Participant 8 states that climate change is not really a topic his parents are concerned with (P8.I). Participant 7 mentioned that members of his family are not really reflecting on their consumer behavior and just buy whatever comes to their mind. He even added that his grandmother and his father would be disappointed if he did not eat meat at family celebrations (P7.I). Participant 6 described her family’s attitude regarding sustainability as “weird” (P6.I, own translation). Only one of the interviewees stated that she is positively influenced by her family but explicitly mentioned her sons as the pivotal family members (P2.I). So again, this is a younger generation exerting positive influence.

Furthermore, two participants feel like they are actively influencing other people regarding sustainable consumption (P7.I; P8.I). Participant 7 explained how he influences his family and vice versa, describing it as a “tug-of-war, that is working in both directions” (P7.I, own translation). Only one

participant stated to consume independently and not being influenced by his social environment at all (P5.I).

Table 15 provides the category scheme regarding the subjective norm, giving an overview of the number of statements assignable to the respective category (n) as well as the total number of mentions (m) and the respective participants.

#### Summary

All in all, it seems like the generation of the Millennials themselves exert a strong positive influence on each other, while older generations seem to have a rather negative influence on them, which, on the other hand, is often rather passive. Many participants stated that the positive influence affects them more than the negative ones (P6; P10). In sum, the influence of the social environment seems to be positive.

#### 4.1.4. Perceived Behavioral Control

Participants feel like they do not have full control over their behavior due to a variety of reasons. The most frequently mentioned reason is the higher price of sustainable food products (P1.I; P2.I; P3.I; P4.I; P5.I; P6.I; P7.I; P8.I; P9.I). Participants 1 and 9 for example explained that since they are still students, they cannot afford to buy their daily food products in an organic supermarket and rather need to keep their expenses as low as possible (P1.I; P9.I). Participant 7 stated that the price level in an organic supermarket is unproportionally high, implying that he would pay more for more sustainable products but not as much as the organic supermarkets charge at the moment (P7.I). Sometimes food prices in these stores are many times higher than those in regular supermarkets according to Participant 8 (P8.I).

Another frequently mentioned issue is the fact, that many of the participants feel that they are lacking the knowledge to really assess the sustainability of the various products (P1.I; P3.I; P4.I; P6.I; P7.I; P8.I; P9.I). Decisions are made based on gut feeling and estimation according to Participant 8 (P8.I).

<sup>17</sup>See the appendix section A4.2 to get access to the full coding scheme.



**Table 15:** Category scheme regarding the subjective norm<sup>17</sup>

Main Category	Sub-category 1	Sub-category 2	Mentions		Participants
			n	m	
3 Subjective Norm	3.1 Friends/ Millennials	3.1.1 Positive influence	8	13	P1.I, P2.I, P3.I, P4.I, P6.I, P8.I, P9.I, P10.I
		3.1.2 Negative influence	1	1	P6.I
	3.2 Life partner	3.2.1 Positive influence	4	4	P1.I, P3.I, P6.I, P7.I
		3.2.2 Negative influence	2	2	P2.I, P10.I
	3.3 Family	3.3.1 Positive influence	1	1	P2.I
		3.3.2 Negative influence	5	6	P1.I, P6.I, P7.I, P8.I, P10.I
	3.4 Active exertion of influence on others		2	2	P7.I, P8.I
	3.5 No influence on social environment		1	1	P5.I
					Own representation

Participant 1 explained that the topic of sustainability regarding food consumption, in general, is hard to “penetrate” (P1.I, own translation) and Participant 9 claimed that he does not really know how to distinguish between sustainable and unsustainable products (P9.I). Participant 6 blames the school system and demands a school subject that deals with sustainable food consumption (P6.I). Participant 7 even added that he would like “someone else to do the thinking” for him (P7.I, own translation), expressing that he does not even want to deal with the topic in more detail.

Also, many participants complained about the lack of sustainable products in regular supermarkets (P1.I; P2.I; P3.I; P5.I; P6.I; P7.I; P10.I), especially regarding plastic-free packaged products (P1.I; P2.I; P3.I). He tries to buy plastic-free, but it is simply not possible said one interviewee (P3.I). Participant 2 stated that sometimes there are simply no regionally produced alternatives and mentioned sugar snaps as an example, which she needed for a certain recipe (P2.I). When confronted with the fact that a possible solution would be to change the store they are shopping in, many of the interviewees stated reasons why that is not an option. One of them, who is living in a smaller city, explained that shopping facilities are very limited (P6.I). Another main reason appears to be the fact, that there is no store that offers all products the participants need (P2.I; P4.I; P6.I). Participant 6 complained that she would have to visit ten different stores in order to get all food products she needs (P6.I). This corresponds to another frequently mentioned aspect, which is a lack of time (P1.I; P2.I; P3.I; P5.I; P6.I). The participants do not have unlimited time to get their grocery shopping done, so they cannot afford to visit many different stores.

Another major reason that a variety of interviewees mentioned, was a lack of trust in the variety of different sustain-

ability labels, on the one hand, and the supermarket chains (P1.I; P2.I; P3.I; P5.I; P6.I; P7.I; P10.I) and food manufacturers (P5.I) on the other hand. Participant 4 as an example describes fair trade as an “obscure thing” (P4.I, own translation) that he does not really trust. “I sometimes find it difficult to really judge whether a product that is labeled sustainable or ecological has really been produced sustainably” said Participant 9. Another interviewee went even further by explaining that food manufacturers often “work with slogans on packaging to pretend sustainability” (P5.I, own translation). He suspects a lot of hypocrisy and eye washing in that context (P5.I). Especially for the big food corporations and supermarket chains, he thinks that it is all about the money and not about sustainability (P5.I). At that point, it is interesting to mention, that the overall education did not seem to play any role regarding the knowledge about sustainable food products. The interviewees who mentioned this lack of trust, have different educational backgrounds ranging from vocational training to an academic Master degree (see section 3.1 for details).

The category scheme regarding the PBC, providing an overview of the number of statements assignable to the respective category (n) as well as the total number of mentions (m) and the respective participants, is displayed below in table 16.

#### Summary

Overall, there is a variety of reasons that leads to the participants’ perception that they are not in full control of their behavior regarding sustainable food consumption. Some of the reasons, however, are based on the same main issues. The lack of trust in the sustainability labels for example is a

<sup>17</sup>See the appendix section A4.2 to get access to the full coding scheme.

**Table 16:** Category scheme regarding Perceived Behavioral Control<sup>18</sup>

Main Category	Sub-category 1	Sub-category 2	Mentions		Participants
			n	m	
4 Perceived Behavioral Control	4.1 Price		9	17	P1.I, P2.I, P3.I, P4.I, P5.I, P6.I, P7.I, P8.I, P9.I
	4.2 Lack of knowledge/ education		7	15	P1.I, P3.I, P6.I, P7.I, P8.I, P9.I, P10.I
		4.3.1 General	7	12	P1.I, P2.I, P3.I, P5.I, P6.I, P7.I, P10.I
	4.3 Lack of sustainable food offers	4.3.2 Products with plastic-free packaging	3	3	P1.I, P2.I, P3.I
		4.4.1 In sustainability label	5	7	P1.I, P2.I, P3.I, P5.I, P6.I, P7.I, P10.I
	4.4 Lack of trust	4.4.2 In supermarkets/ big food manufacturers	1	3	P5.I
	4.5 Lack of time		5	7	P1.I, P2.I, P3.I, P5.I, P6.I
	4.6 No shop that offers all the sustainable products needed		3	4	P2.I, P4.I, P6.I

Own representation

result of the fact that the participants did not really deal with these labels and can therefore not distinguish the real sustainability labels from the greenwashing labels. This aspect can be subsumed under “lack of knowledge / education”. If people are familiar with the labels and know which of them are trustworthy, it is not necessary to trust the food corporations or supermarket chains as people could simply rely on the respective labels. The fact that there is no store supplying all sustainable products, is only a problem as the participants lack the time to visit multiple stores, which is the actual obstacle here. This leads to the following main external obstacles preventing people from consuming sustainably:

1. Price
2. Lack of knowledge/education
3. Lack of sustainable product offers
4. Lack of time

#### 4.1.5. Self-efficacy

A big part of the questioned people blamed their own laziness or convenience for not actually consuming as sustainable as they actually could (P1.I; P2.I; P3.I; P4.I; P6.I; P7.I; P8.I). Participant 4 stated that due to his “weaker self” (P4, own translation”) he wants to buy everything in one store, leading him to go to a regular food store rather than to an organic supermarket (P4.I). Participant 7 added that the organic supermarket close to his home has inconvenient opening hours (P7.I). Because of his laziness, he is not dealing with sustainable food consumption and has therefore not

enough knowledge to identify sustainable products (as described in sub-chapter 4.1.4), said one of the interviewees (P8.I).

Also frequently mentioned by the participants was that the purchase decisions were rather unconscious, respectively decisions born out of habit (P1; P3; P4; P5; P8; P9; P10.I). Participant 8 mentioned a “basic assortment” (P8.I, own translation), which he buys again and again, because he knows these products well and where to get them in the store, so he can “deal with this subject quickly” (P8.I, own translation). He added that he keeps on buying one specific cheese, even though he does not even like it, out of pure habit. In this context, Participant 3 rather talked about how changing one’s habit is hard as she thinks that “humans are creatures of habit” (P3.I, own translation) and that it takes time. She was referring to the fact that she started to change her consumer behavior some years ago as previously described in sub-chapter 4.1.2.1.

Some of the interviewees implied, that sometimes they buy unsustainable products simply because of a desire for these products (P1.I; P2.I; P4.I; P5.I; P9.I; P10.I). Participant 2 for example said, that she sometimes just “gets weak” (P2.I, own translation), while Participant 5 mentioned that his favorite candy is very unsustainable, but he just likes it so much (P5.I).

Another aspect is closely connected to the previously mentioned lack of time. Several participants stated that sometimes the reason they buy unsustainable products is

their own impatience (P1.I; P3.I; P4.I). Firstly, this refers to the fact that they only want to go to one store to get everything they need (P4.I), as mentioned in chapter 4.1.4. Secondly, it also refers to participants not taking much time for their shopping trip and therefore choosing products without really dealing with them (P1.I; P3.I). In that context, Participant 1 added he wants to minimize the time spent in the store as he feels uncomfortable while shopping (P1.I).

Table 17 provides the category scheme regarding self-efficacy, giving an overview of the number of statements assignable to the respective category (n) as well as the total number of mentions (m) and the respective participants.

#### *Summary*

Overall, there is a variety of internal obstacles preventing people from consuming according to their attitude. Again, some obstacles may be a result of the same basic issues. Correspondingly, participants' laziness and convenience are connected to their impatience and the fact that they may feel uncomfortable while shopping. All these factors lead people to minimizing the time spend on grocery shopping. This leads to the following three main internal obstacles:

1. Minimizing the time spent for grocery shopping
2. Unconscious decision/habit
3. Desire for unsustainable products

## 4.2. Observation and the Verbal Protocol Analysis

The first chapter of this section presents the insights of the observation as captured by the researcher. After that, the second chapter is dealing with the thoughts of the participants captured by the VPA. The sources for the statements in that section are the observation combined transcripts from the respective participants. For example, the observation combined transcript of Participant 1 is shortened as "P1.O".

### 4.2.1. Observation

During the observation, it was most striking that most of the purchases (m=57) did not include an observable decision process. It seemed like the participants just took the respective products without even really looking at them or considering alternative products, probably because they were already familiar with the product. Often it appeared as if the actual purchase decision had been made earlier and in the store, the purchase is only carried out. It is important to mention that this could be observed multiple times during the shopping trips of all ten participants (P1.O; P2.O; P3.O; P4.O; P5.O; P6.O; P7.O; P8.O; P9.O; P10.O).

Sometimes the observed persons did not even stop to pick a product but rather just put them into the shopping cart or bag while passing by (m=22). Often the purchases seemed to be spontaneous. A major part of the participants showed this behavior (P2.O; P4.O; P6.O; P7.O; P8.O; P9.O; P10.O).

Often the participants took a superficial look at the product before picking it (m=33). Participants seemed to evaluate its appearance, e.g. regarding its freshness or different flavors within the same brand but did not properly read the information on the packaging respectively really thinking about the product. Here as well, it is important to mention that this behavior could be observed multiple times during the shopping trips of all participants (P1.O; P2.O; P3.O; P4.O; P5.O; P6.O; P7.O; P8.O; P9.O; P10.O).

Only six participants (P1.O; P2.O; P3.O; P7.O; P9.O; P10.O) appeared to even consider alternatives at least a few times during their shopping trips (m=13). However, in many of these cases, participants seemed to not really think about the products in detail, but again rather compare superficial attributes like appearance (P2.O; P3.O) or the quantity in the package (P2.O). Only selectively the participants seem to actively think about the products and evaluate alternatives (P3.O; P7.O; P10.O).

Furthermore, it was striking that many participants seemed to reflect or even hesitate where to go next, respectively were actively searching for a product at some point in the shopping trip (P1.O; P3.O; P4.O; P5.O; P9.O; P10.O). In that context, it is to be noted that especially the two participants that claimed to go to the same store every time, so they are familiar with it and know how to find each product, showed this insecurity (P1.O; P5.O).

The category scheme regarding the observed behavior, providing an overview of the number of statements assignable to the respective category (n) as well as the total number of mentions (m) and the respective participants, is displayed below in table 18.

#### *Summary*

All in all, it can be stated that regarding the major part of the products, it seemed that the actual purchase decision was made at some point in the past. The observed behavior during the shopping trip appeared to be mostly defined by previously formed habits.

### 4.2.2. Verbal Protocol Analysis

#### *Reasons for Product Choices*

By far the biggest share of the participants' thoughts obviously centered around the products they intend to buy and why they do so. It is striking that in most cases participants (P1.O; P2.O; P3.O; P4.O; P5.O; P6.O; P7.O; P8.O; P9.O; P10.O) only stated that they need a certain product, without thinking about why they need it, what alternative products could there be or any other additional considerations (m=82). These thoughts are all similar like: "now I am looking for cheese" (P1.O, own translation), "I need butter" (P10.O, own translation) or "Now I am going to get some grapes" (P2.O, own translation). This corresponds well with the impression from the observation that the actual purchase decision had taken place before the shopping trip, which then only marked the realization of the purchases.

<sup>19</sup>See the appendix section A4.2 to get access to the full coding scheme.

<sup>20</sup>See the appendix section A4.2 to get access to the full coding scheme.

**Table 17:** Category scheme regarding self-efficacy<sup>19</sup>

Main Category	Sub-category 1	Mentions		Participants
		n	m	
5 Self-efficacy	5.1 Laziness / Convenience	7	19	P1.I, P2.I, P3.I, P4.I, P6.I, P7.I, P8.I
	5.2 Unconscious decisions / habit	7	12	P1.I, P3.I, P4.I, P7.I, P8.I, P9.I, P10.I
	5.3 Desire for unsustainable products	6	6	P1.I, P2.I, P4.I, P5.I, P9.I, P10.I
	5.4 Impatience / Taking too little time	3	4	P1.I, P3.I, P4.I
	5.5 Uncomfortable shopping	1	1	P1.I

Own representation

**Table 18:** Category scheme regarding the observation<sup>20</sup>

Main Category	Sub-category 1	Sub-category 2	Mentions		Participants
			n	m	
6 Behavior during shopping	6.1 Observation	6.1.1 Selection without closer examination of the products	10	57	P1.O, P2.O, P3.O, P4.O, P5.O, P6.O, P7.O, P8.O, P9.O, P10.O
		6.1.2 Superficial view at the products	10	33	P1.O, P2.O, P3.O, P4.O, P5.O, P6.O, P7.O, P8.O, P9.O, P10.O
		6.1.3 Taking the product in passing	7	22	P2.O, P4.O, P6.O, P7.O, P8.O, P9.O, P10.O
		6.1.4 Dealing with the product and alternatives	6	13	P1.O, P2.O, P3.O, P7.O, P9.O, P10.O
		6.1.5 Reflecting/hesitating	5	8	P1.O, P3.O, P4.O, P5.O, P9.O, P10.O

Own representation

Also, almost all participants frequently thought about what they like or dislike regarding taste respectively about a general desire for certain products (P1.O; P2.O; P3.O; P4.O; P5.O; P6.O; P7.O; P9.O; P10.O). For example, Participant 1 chose a pack of tortellini after having stated “I’m in the mood for tortellini again”. (P1.O, own translation) or Participant 2 who did not get a certain salad as she is “has grown tired of this one” (P2.O, own translation).

Another relevant category of thoughts was about the lacking offers in the respective stores or lacking alternative products (P1.O; P2.O; P3.O; P4.O; P7.O; m=15). This was the case if e.g. a certain product was sold out (P1.O), there was no alternative product without packaging (P2.O; P3.O; P4.O) or if a certain product is not available at all (P7.O).

Often the product choices were directly influenced by the participants’ general social environment (P1.O; P3.O; P7.O; P8.O; m=9). Either because someone actively recommended a certain product (P7.O) or because the participant chooses a product for a person from his social environment, mostly as the partner or flatmate likes a certain product (P1.O; P3.O;

P8.O). A lot of the product choices of Participant 10, who is a mother of two, were heavily influenced by the preferences of her children (P10.O).

The impression from the observation, that the participants often examine the appearance of the products could be confirmed by the VPA (P1.O; P2.O; P3.O; P8.O; P9.O; m=13). Frequently, participants stated something like “they look good” (P1, own translation) or “this one does not look good” (P2.O, own translation) when choosing products.

A further driver seems to be the price as implied by the majority of participants (P1.O; P2.O; P4.O; P5.O; P6.O; P7.O; P10.O) in a variety of situations (m=13). For example, Participant 1 said he chooses a certain milk as it is the cheapest (P1.O) or Participant 2 who decided to buy a pack of coconut flakes which was actually too big, but very cheap (P2.O).

In fact, also sustainability plays a role in product choices, however, compared to the previously described factors, it plays a rather minor role (m=7). Correspondingly, Participant 7 tried to buy vegetarian food (P7.O). It is important to mention at that point, that this does not necessarily mean

that her vegetarian consumption is motivated by sustainability. However, it was classified as abstinence from meat like previously mentioned in sub-chapter 4.1.2.2. Participant 4 chose bananas because they were fair traded (P4.O) and Participant 5 chose pasta that was regional (P5.O). Participants 3 and 10 chose certain products because of their sustainable packaging (P3.O; P10.O).

Further thoughts often centered about varying nutrition (P1.O; P5.O; P7.O; P10.O;  $m=6$ ). Often these lines of thoughts started with "What could we cook next time?" (P1.O, own translation). Participant 10 stated that she chose one product as she never had it before (P10.O).

Special offers influence product choices as well (P2.O; P3.O; P4.O; P6.O; P8.O; P10.O  $m=6$ ). For example, Participant 4 bought a feta cheese because it was discounted (P4.O) or Participant 3 who stated to generally watch out for special offers (P3.O).

The quantity in a package also seems to be an important aspect as many participants stated due to the VPA (P1.O; P2.O; P4.O; P10.O;  $m=5$ ). Participant 2, for example, said that she did not choose the fair-trade bananas as they were only available in too big packages (P2.O).

Other only selectively stated aspects included how healthy certain products were (P5.O, P8.O;  $m=2$ ), some products' best before date (P9.O;  $m=3$ ), how easy and fast to prepare certain products are (P5.O;  $m=2$ ) or that the choice was random (P9.O;  $m=1$ )

#### *General Thoughts*

In accordance with the observation that the participants appeared to be insecure sometimes, they frequently thought about where to find a certain product (P9.O; P10.O) or were reflecting on what they already put in their shopping cart respectively what they already have at home (P2.O; P4.O; P7.O; P8.O; P10.O). Some also considered to buy certain products which they needed somewhere else, either due to an insufficient offer at the current store (P2.O; P4.O) or personal preferences (P4.O; P10.O).

Participant 5 at some point additionally stated that he does not have "the nerve to look for where anything is" (P5.O, own translation), stressing again his dislike for grocery shopping as described in chapter 4.1.1.

#### *Conversation with the Own Child*

Participant 6 was a special case as she brought her two-year-old daughter along, for the shopping trip, so she had to deal with her a lot, leaving only little room for her own thoughts. Very often, she asked her daughter whether she liked a certain product and whether she should purchase it (P6.O;  $m=10$ ) or explained some products to her daughter (P6.O;  $m=1$ ). Also, some time Participant 6 just talked nonsense with her daughter in order to keep her occupied and in good spirits (P6.O;  $m=3$ ). Nevertheless, at the end of the shopping trip, her daughter got fretful anyways and she had to finish her shopping early (P6.O).

Table 19 provides the category scheme regarding the VPA, giving an overview of the number of statements assignable to the respective category (n) as well as the total number of mentions (m) and the respective participants.

### 4.3. Actual Purchase Decisions

It was possible to examine the actual purchase behavior for all participants except for Participant 6. Table 20 presents an overview of the evaluation of purchase decisions per participant and crosschecks it against their self-reported assessment of their attitude as described in sub-chapter 4.1.2.1. The average score regarding the impact from production was calculated as explained in section 3.3. The shares displayed in the table were calculated on the basis of the list of purchased products per participant<sup>22</sup>. An additional letter indicates for each cell if the respective participant mentioned the respective aspect to be an important part of sustainable food consumption, as described in sub-chapter 4.1.2.2. In that context "Y" means that the participant did mention the aspect and "N" indicates that she did not.

In most cases the average score for the impact from production was between 1.5 and 2.0 which means in average the products had a low to medium GHG impact as defined in chapter 2.1.4. This corresponds to the findings from the interviews e.g. that participants tried to avoid meat respectively dairy products (P1.I; P2.I; P3.I; P4.I; P7.I; P9.I; P10.I), which have a particularly high impact (see chapter 2.1.4).

Even though all interviewees except for Participant 5 and 6 said that the origin of the product is an important aspect of sustainable food consumption for them (P1.I; P2.I; P3.I; P4.I; P6.I; P7.I; P9.I; P10.I) and they state to have a positive attitude (P1.I; P2.I; P3.I; P4.I; P7.I; P8.I; P9.I; P10.I) they mostly did not buy regional products. Participants 4 and 5 did at least buy some regional products (P4.O; P5.O), which is remarkable, as the Participant did not even state to consider the origin of the product. Only Participant 10 who went to an organic supermarket bought a substantial part of regional products (P10.O).

The share of unpacked products was generally higher than the share of regional products. Again, Participant 10 had the biggest share, with almost half of the products bought being unpacked. Most of the other participants bought between approximately eight and twenty percent unpacked products (P1.O; P2.O; P3.O; P4.O; P6.O; P7.O; P8.O). Indeed Participant 8, who had the lowest share, did not mention the reduction of packaging as important aspect of sustainable food consumption (P8.O). On the other hand, Participant 5 and Participant 9 both mentioned it but did not even buy one single unpacked product (P5.O; P9.O) and one of them did at least buy one fair-traded product (P10.O).

Only three participants stated fair trade to be an important part of sustainable food consumption (P7.O; P8.O; P10.O). It is remarkable that two of them did not even buy one single fair-traded product (P7.O; P8.O).

Only two participants did not mention natural respectively organic production to be sustainable (P3.O; P5.O). Participant 5 did shop accordingly and bought not even one or-

<sup>21</sup>See the appendix section A4.2 to get access to the full coding scheme.

<sup>22</sup>See the appendix section A3 for a detailed list of purchases per participant

<sup>23</sup>As described in the summary of sub-chapter 4.2.2.1



**Table 19:** Category scheme regarding the Verbal Protocol Analysis<sup>21</sup>

Main Category	Sub-category 1	Sub-category 2	Sub-category 3	Sub-category 4	Mentions		Participants
					n	m	
6 Behavior during shopping	6.2 Thoughts/VPA	6.2.1 Reason for purchase	6.2.1.1 "I still need X"/ Habit/ Already determined before		10	82	P1.O, P2.O, P3.O, P4.O, P5.O, P6.O, P7.O, P8.O, P9.O, P10.O
			6.2.1.2 Like / dislike taste		9	27	P1.O, P2.O, P3.O, P4.O, P5.O, P6.O, P7.O, P9.O, P10.O,
			6.2.1.3 Lack of / insufficient offers		5	15	P1.O, P2.O, P3.O, P4.O, P7.O
			6.2.1.4 Influence from social environment	6.2.1.4.1 General	4	9	P1.O, P3.O, P7.O, P8.O
				6.2.1.4.2 Children	1	4	P10.O
			6.2.1.5 Appearance of the products		5	13	P1.O, P2.O, P3.O, P8.O, P9.O
			6.2.1.6 Price		7	12	P1.O, P2.O, P4.O, P5.O, P6.O, P7.O, P10.O
				6.2.1.7.1 Plastic / packaging free	2	3	P3.O, P10.O
			6.2.1.7 Sustainability	6.2.1.7.2 Vegetarian	1	2	P0
				6.2.1.7.3 Fairtrade	1	1	P4.O
				6.2.1.7.4 Origin of the product	1	1	P5.O
			6.2.1.8 Varied diet		4	6	P1.O, P5.O, P7.O, P10.O
			6.2.1.9 Special offer		6	6	P2.O, P3.O, P4.O, P6.O, P8.O, P10.O
			6.2.1.10 Quantity in the package		4	5	P1.O, P2.O, P4.O, P10.O
			6.2.1.11 Best before date		1	3	P9.O
			6.2.1.12 Healthy		2	2	P5.O, P8.O
			6.2.1.13 Easy to prepare		1	2	P5.O
			6.2.1.14 Random choice		1	1	P9.O
		6.2.2 General thoughts	6.2.2.1 "I already have product X"		5	14	P2.O, P4.O, P7.O, P8.O, P10.O
			6.2.2.2 "Where is product X"		2	6	P9.O, P10.O
			6.2.2.3 "I will buy product x somewhere else"		3	5	P2.O, P4.O, P10.O
			6.2.2.4 No desire to shop		1	1	P5.O
		6.2.3 Conversation with the own child	6.2.3.1 What the child wants		1	10	P6.O
			6.2.3.2 Explanation of products		1	1	P6.O
			6.2.3.3 Unrelated		1	3	P6.O

Own representation

**Table 20:** Crosscheck of participants' self-report and the actual purchased products

Participant	Overall attitude	Average score impact from production	Share of regional products	Share of unpacked products	Share of fair-traded products	Share of organic products
Did the participant mention the respective aspect or related ones <sup>23</sup> as an important part of sustainable food consumption? Y = Yes N = No						
1	Unlimited positive	1.69 Y	0.00% Y	10.00% Y	0.00% N	0.00% Y
2	Unlimited positive	1.53 Y	0.00% Y	15.60% Y	0.00% N	0.00% Y
3	Unlimited positive	1.38 Y	0.00% Y	20.00% Y	0.00% N	16.67% N
4	Limited positive	1.83 Y	4.00% Y	12.00% Y	4.00% N	4.00% Y
5	Limited positive	1.81 N	7.14% N	0.00% Y	0.00% N	0.00% N
7	Limited positive	1.9 Y	0.00% Y	14.30% Y	0.00% Y	14.30% Y
8	Limited positive	1.7 Y	0.00% N	8.57% N	0.00% Y	5.71% Y
9	Limited positive	1.73 Y	0.00% Y	0.00% Y	0.00% N	0.00% Y
10	Unlimited positive	1.55 Y	18.18% Y	45.45% Y	4.54% Y	100% Y

Own representation

ganic product. Participant 3 in contrast, bought more than 16% organic products, only second to Participant 10, who bought organic products only, as she visited an organic supermarket. The other participant did not buy or did only buy very few organic products even though they claimed it to be important for sustainable food consumption (P1.O; P2.O; P4.O; P7.O; P8.O; P9.O).

In summary, the actual purchase decisions of the participants did not really reflect the self-report given during the interviews. The only exception is Participant 10 who did in fact buy many organic, regional, and unpacked products (P10.O).

## 5. Summary and Limitations

### 5.1. Summary

This thesis picked up on the recent trend of sustainability and sustainable consumption by investigating the sustainable food consumption of German Millennials regarding an assumed gap between their attitude and their actual consumer behavior. Based on the TPB, which served as the theoretical framework of the thesis, a multi-step, qualitative research process was developed in order to find viable explanations for the ABG. The process included the triangulation of questioning everyday consumers via qualitative depth interviews, the observation of those consumers during one of their regular grocery shopping trips, and the superficial analysis of

the products they bought. The summary of the study's main findings is described in the following two chapters.

#### 5.1.1. Occurrence of the Attitude Behavior Gap

There seems in fact to be a gap between the sustainable attitude and the actual behavior. On the one hand, half of the participants even claim to still have room for improvement as described in sub-chapter 4.1.2.1. On the other hand, most participants have a clear positive attitude regarding sustainable food consumption, which was previously described in sub-chapter 4.1.2.1 as well. However, sections 4.2 and 4.3 showed as well that the actual behavior of the participants did in fact not correspond completely with that positive attitude. Many participants did often buy products with higher impacts regarding the evaluation scheme developed in chapter 2.1.4 and only selectively bought fair traded products (see section 4.3). Additionally, the results of the VPA suggest that sustainability only plays a minor role during the actual shopping trip (see chapter 4.2.2). The results presented in section 4.3 imply a gap between the participants' self-reports and their actual behavior as well.

#### 5.1.2. Explanations of the Attitude Behavior Gap

In sum, the influence of the social environment was positive as chapter 4.1.3 showed and should therefore not provide an explanation for the ABG. However, participants men-

tioned several factors regarding PBC and self-efficacy detaining them from fully consuming sustainably and thus providing possible explanations for the ABG. Thus, these determinants are examined in the following sub-chapters.

#### *Perceived Behavioral Control*

##### *High Prices of Sustainable Products*

The most frequently mentioned external obstacle was the high price level of sustainable food products, implying that people may not be able to afford these products (P1.I; P2.I; P3.I; P4.I; P5.I; P6.I; P7.I; P8.I; P9.I). Especially for people who may have a limited budget like e.g. students, this could be a valid explanation. However, only one participant stated to have a limited budget for food (P1.O). All others participants said they can theoretically spend as much as they like for food (P2.O; P3.O; P4.O; P5.O; P6.O; P7.O; P8.O; P9.O; P10.O). This indicates that even though participants are actually able to afford sustainable food, they just lack in willingness to spend the higher prices compared to the other products.

##### *Lack of Knowledge / Education Regarding Sustainable Products*

In some cases, the ABG can be a result of a lack of knowledge. That means people may want to consume according to their attitude but fail to do so, as they are unable to identify sustainable respectively unsustainable products and therefore simply fail to choose sustainable products (P1.I; P3.I; P4.I; P6.I; P7.I; P8.I; P9.I).

##### *Insufficient Sustainable Food Product Range*

Another possible obstacle is the lacking range of sustainable products. Especially in the regular supermarkets like Aldi, Lidl or Rewe, there is only a poor offer of unpacked product. On the other hand, people could also choose to shop at organic supermarkets or the weekly farmers' market that definitely provide a sufficient offer of sustainable products. However, the participants stated various reasons why they do not choose to shop there, above all, the higher prices and the expectation to not getting everything they need at one store (P1.I; P2.I; P3.I; P5.I; P6.I; P7.I; P10.I).

#### *Self-efficacy*

##### *Minimizing the Time Spent for Grocery Shopping*

One important internal obstacle preventing participants from consuming according to their attitude is peoples' laziness and their tendency to be convenient (P1.I; P2.I; P3.I; P4.I; P6.I; P7.I; P8.I). That means people are too lazy to deal with the subject sustainability in order to fill their knowledge gaps. Also, people like the convenience of getting all products needed in one store, which is why they keep shopping in regular supermarkets that might have an adequate offer of sustainable products (as described in the previous sub-chapter). Additionally, many participants claimed to be impatient (P1.I; P3.I; P4.I). All in all, that means people are trying to minimize the time and effort they put into grocery shopping, possibly leading to hasty and spontaneous purchases, which corresponded with the findings from the observation and the VPA (see section 4.2). As they are often

in a hurry, they do not really think about why they choose a certain product but rather do it automatically as confirmed by the observation and VPA (P1.O; P2.O; P3.O; P4.O; P5.O; P6.O; P7.O; P8.O; P9.O; P10.O). This may result in unthoughtful and unconscious product selection that is not reflecting the consumer's attitude.

##### *Unconscious Decisions Respectively Habit*

Also, participants frequently stated that many of their purchase decisions are unconscious or habitual (P1.I; P3.I; P4.I; P5.I; P8.I; P9.I; P10.I) which corresponds to the findings from the observation and the VPA (see section 4.2). This means the actual decision was made before the shopping trip, which is only the realization of that decision. In combination with the fact that some participants said that they changed their attitude in the last years, a possible explanation for the ABG is that people simply do not have enough time to change their habits.

##### *Desire for Unsustainable Products*

Many participants mentioned that they sometimes buy unsustainable products out of desire. However, this is only the case for single exceptions (P1.I; P2.I; P4.I; P5.I; P9.I; P10.I). Accordingly, this aspect does probably not provide a suitable explanation for the ABG, as the gap does not only refer to single purchase behaviors but rather the overall consumer behavior.

## 5.2. Limitations

General limitations regarding all qualitative research, e.g. regarding intersubjectivity or generalizability have to be kept in mind in any case (Flick, 2018; Giri & Biswas, 2019). Furthermore, there are specific limitations of this thesis, which will be discussed in this section.

### 5.2.1. Theoretical Framework

On the one hand, one of the main findings of the study is that sustainable food consumption is strongly determined by habit. On the other hand, the TPB was previously often discussed regarding its validity in the context of habitual behavior (see sub-chapter 2.2.2.3). Possibly, another framework, for example, one that explicitly conceptualizes the habitual aspect of behavior would have been more suitable for this thesis.

##### *The SHIFT model*

This model has recently been used to encourage a change of behavior to act more sustainably (White, Habib, & Dahl, 2020; White, Habib, & Hardisty, 2019). The authors explicitly state that the framework can help to address the attitude behavior gap so it could have also been a suitable approach to explain the attitude behavior gap. It includes five key drivers of behavior change regarding sustainability: social influence, habit formation, the individual self, feelings and cognition, and tangibility (White et al., 2020).

The "Social Influence" is similar to the subjective norm from the TPB, involving beliefs about what is socially appropriate or expected.

The “Individual Self” depicts a group of factors centered on the actual individual, who desire to have a positive self-view (White et al., 2019). This can lead to positive outcomes (Dunning, 2007) or to negative outcomes as a result of self-defensive reactions (Dickinson, 2009). Self-consistency describes that in addition to the fact that people want to see themselves positively, they also want to see themselves as been consistent. Self-consistency research suggests that consumers engaging in sustainable behavior at one point in time often leads to consistent sustainable behavior in the future (White et al., 2019). Also, self-interest plays a major role in influencing behavior according to White et al. (2019) as well as self-efficacy which they base on the work of (Bandura & Walters, 1977). Also, individual differences that are similar to the “external factors” as described in subchapter 2.2.1.1, play a role according to the SHIFT model (White et al., 2019). In summary, it can be stated, that many of the concepts subsumed under the “individual self” can also be found within the extended TPB as described in this chapter.

The key factor “Feelings and Cognition” describes on the one hand how positive (e.g. love for nature or pride) and negative emotions (e.g. guilt or fear) can heavily influence consumer decisions and are therefore a major part of the SHIFT model. On the other hand, it also includes how information, learning, and knowledge as important aspects (White et al., 2019). This coincides with one of the major findings from this thesis, the lack of knowledge as a driver influencing PBC and therefore a reason for the ABG.

White et al. (2019) also introduce some rather new aspects like the key factor “Tangibility”. This depicts the unique facet of sustainable consumption that respective actions and outcomes often seem abstract, vague, and distant from oneself. If respective outcomes are communicated clearer, more concrete, and more comprehensive, people are more likely to consume sustainably.

Most importantly, “Habit Formation” is stated as one key driver (White et al., 2019). That includes the breaking of bad habits as well as the actual formation of desirable habits. Retrospective, as habits emerged as a main driver for the ABG in the context of sustainable food consumption of German Millennials the SHIFT model may have been a more suitable guiding framework in order to explore the gap than the TPB.

On the other hand, the framework originally refers to changing consumer behavior and not explaining it (White et al., 2019), which was not the scope of this thesis. That is why the TPB was chosen over the SHIFT model for this thesis.

#### *Value-belief-norm-theory*

Another possible theory that is frequently mentioned in the context of pro-sustainable behavior is the Value-belief-norm-theory. It does not conceptualize habits as well, but rather focuses on a person’s values (Stern, 2000). It did not have obvious advantages over the TPB with regard to explaining and exploring sustainable consumer behavior. However, it was less suitable to illustrate the ABG, which is why it was not chosen as guiding framework of this thesis.

#### *Conclusion*

In Summary, the TPB illustrates the ABG well and was

designed to explore and explain behavior. It was a sound theoretical framework for this thesis and succeeded in providing several sensible explanation approaches for the ABG. However, for further research in the domain of sustainable consumption, a further extension of the TPB is needed in order to better capture habits respectively the processual and repeating character of sustainable food consumption.

### 5.2.2. Research Design

#### *Sample*

The sample is especially composed of people at least indirectly personally known to the researcher. As the sample was not randomly chosen, this might lead to a selection bias and therefore possibly limiting the generalizability of results (Atteslander, 2013; Geddes, 1990).

Furthermore, there was only a limited geographical spread, as only participants from the south of Germany were selected. Including participants from other parts of Germany may have added some additional insights. However, it is questionable if people from other parts of Germany really differ considerably in their consumer behavior.

#### *Content Analysis*

The content analysis followed the approach by Mayring (2010) but the involvement of just one researcher in the process did not offer the possibility to assess the inter-coder reliability.

### 5.2.3. Results

#### *Technical Fails During Shopping Trips*

Like described in chapter 3.2.3, the audio gear failed in three cases (P6.O; P7.O; P8.O). A considerable part of the information, that could have been captured with the audio record was lost for these participants. In these cases, a protocol was created from the fresh memories of the researcher, still ensuring insights into these participants’ shopping behavior and partially compensate for this loss.

#### *Possible Bias*

Additionally, results may be distorted e.g. due to the social desirability bias (Atteslander, 2013; Nederhof, 1985), which reflects the tendency on behalf of the participants to deny socially undesirable traits and behaviors and to claim socially desirable ones, and the tendency to say certain things in order to appear in a favorable light (Atteslander, 2013; Nederhof, 1985). In order to lower the bias, the study also included an observation part in addition to the self-report in the interviews.

#### *Evaluation of the Purchase Decisions*

The evaluation of the purchase decisions regarding sustainability is done on a high level and was not developed within a scientifically sound process. Therefore, the evaluation provides only a limited value. However, the quantification was explicitly not the main objective of the thesis. The evaluation was only used to roughly crosscheck the participants’ self-report and their actual purchase decisions and in order to be able to compare the purchase decisions of the different participants.

## 6. Implications, Contribution, and Further Research

The last part describes the practical implications, which can be derived from the key findings of the thesis provides as well as the theoretical contribution and possible directions for further research.

### 6.1. Practical Implications

#### 6.1.1. Sustainable Food Manufacturers and Supermarket Chains

This thesis provides insights into the decision-making of consumers and contributes to a better understanding of the ABG gap within the food industry. The presented findings might be of potential interest to sustainable food manufacturers and supermarket chains, who are keen to transform consumers' sustainable attitudes into actual buying behavior. Understanding the consumers' attitude towards sustainable consumption as well as their constraints regarding PBC and self-efficacy may help the industry to the following issues.

Participants complained about the insufficient range of sustainable products (see chapter 4.1.4) in the regular supermarket chains. That indicates that there is actually a big demand for sustainable products and extending the offer could, therefore, bear a competitive advantage.

Simply extending the portfolio is not enough. Sustainable food manufacturers also have to rethink their communication and marketing & sales strategy. It is not possible to give specific recommendations as even within the food sector, different products may have very different purchase drivers, target customers, etc. In any case, manufacturers should consider the fact that often the consumer behavior is habitual, respectively the purchase decisions are made before the actual shopping trip (chapter 4.1.5). Referring to customer journey literature, the pre-purchasing phase (Lemon & Verhoef, 2016) gains importance and should be especially considered. It is essential to understand and address the factors influencing this decision, in order to get people to change their habits or even form them in favor of the respective company. Exploring the factors that influence the formation or breaking is a major challenge for these companies or could even be a direction for further research.

#### 6.1.2. Public Policy

Apart from profit-driven firms, the findings are also valuable for public policy. Based on the findings of this thesis, necessary steps could be initiated in order to foster sustainable food consumption and make an effort in order to close the ABG.

As described in chapter 5.2.1, participants showed a low willingness to pay the price premium for sustainable products despite the fact that they could actually afford to pay it. Therefore, a sensible action for public policy would be the implementation of a GHG based tax that would raise the prices of unsustainable products. Raising the prices of unsustainable products would lift the barrier of sustainable products being too expensive (relatively) and would foster sustainable food

consumption. If other taxes were lowered in return, the overall tax load, respectively the tax revenue for the German state could be kept constant.

Another ecologically worthwhile step, would be the development and implementation of a transparent, universally valid, and for all food products mandatory sustainability label. That way, people would not need to have extensive knowledge about sustainability. If it was a simple and concise concept like e.g. a traffic light system, people could additionally minimize the time necessary to evaluate the sustainability of products to simple checking the traffic light label with one look.

Moreover, sustainability and especially sustainable consumption should be part of the curriculum of any school type. It would guarantee that all people in Germany have a basic understanding of sustainability and would be able to evaluate different product alternatives regarding their sustainability.

#### 6.1.3. Consumers

This thesis also bears implications for private consumers. They should actively reflect on and challenge their grocery shopping behavior regarding a possible ABG. Also, they should rethink and possibly adjust their habits as well as actively trying to take more time for grocery shopping and make conscious decisions (when grocery shopping). In this way, the gap could be closed or at least reduced, even if in special cases they give in to their desire and give themselves a treat.

If someone lacks the knowledge regarding sustainable food consumption, there are consumer protection and information apps like "Codecheck", which can help to evaluate the sustainability of products in an easy, fast and comprehensive way.

### 6.2. Theoretical Contribution

This thesis contributes to the consumer research on the ABG, as it is one of few studies focusing on sustainable food consumption in Germany and provides several explanation approaches for the gap. The work was built on previous research on the ABG, which was either generic (e.g. Prothero et al. (2011)) or had a focus on other industries (e.g. Schäufele and Hamm (2018)) and/or other countries (e.g. de Barcellos et al. (2011)). It is remarkable that most studies chose a rather quantitative approach to explore the ABG (e.g. Farjam et al. (2019), Götze and Naderer (2019), or Schäufele and Hamm (2018)). This thesis provided rich and new, qualitative insights as only a few studies had a comparable research object and setup (Aschemann-Witzel & Niebuhr Aagaard, 2014; Wiederhold & Martinez, 2018). Some of the findings of this thesis are conform to these studies (as described in chapter 2.2.3) but also new explanations were uncovered. Most important is the emergence of habit as main driver of consumer behavior regarding food consumption.

Wiederhold and Martinez (2018) also mentioned habit but described it mostly as the choice of the store consumers shop in, while the findings on habit in this thesis refer to the



product choices and. Also, the explanation approach that people try to minimize the time spent for grocery shopping is new.

Additionally, this thesis adds to behavioral research by applying the TPB and successfully extending it by one determinant, the self-efficacy. The extension worked out well, by clearly distinguishing between internal and external obstacles or reasons that keep people from putting a respective behavior into practice. Especially when it comes to removing these obstacles, this distinction is reasonable. While the food industry and public policy possibly have an influence on the external factors, it is more the call for the consumers themselves if it comes to the internal obstacles. With this extension the TPB was improved as one major criticism of the theory could be refuted.

At the same time, directions for further research can be derived from this thesis. One possibility could be quantifying and thereby verifying the qualitative findings of this study. A conceivable approach could be an online survey quantifying the attitude, subjective norm, PBC, self-efficacy, and the behavior itself and testing for possible interrelations.

Another sensible research direction could be to examine the habit formation in more detail in order to elaborate influencing factors, how people can change their habits themselves or how third parties, like public policy or food manufacturers or supermarket chains, can influence peoples' habits.

Last, it is important to mention that a generally valid and holistic measure of sustainability would highly benefit the whole research stream on sustainability and public policy by making sustainability tangible and comparable.

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