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Overview of Papers

The present cumulative dissertation was written from 2020-2023 at the Professorship of Christian Social Ethics and Social Policy at the Business Faculty of the Catholic University of Eichstätt-Ingolstadt. All papers in this dissertation represent independent contributions to scientific journals in the fields of Sustainable Consumption, Sustainable Food, and Sustainable Consumer Behavior. They examine consumer behavior regarding sustainable food by analyzing various factors that influence consumers' decision-making.

Paper I: Winterstein, J., & Habisch, A. (2021). Organic and local food consumption: A matter of age? Empirical evidence from the German market. *ABAC Journal*[1], 41(1), 26-42.

ABAC Journal is an international publication by Assumption University, Bangkok, Thailand, focusing on business management and related social sciences; SJR is 0.147 by 2022.

Paper II: Winterstein, J. (2022). Nudging and Boosting towards Sustainable Food Choices– A Systematic Literature Review of Cognitively Oriented Measures. *Products for Conscious Consumers: Developing, Marketing and Selling Ethical Products*[1], 113-132. https://doi.org/10.1108/978-1-80262-837-120221014

The book was initiated by two professors from Lagos Business School, Pan-Atlantic University, Nigeria, and published by Emerald Publishing Limited.

Paper III: Winterstein, J., Frank, F., & Habisch, A. (2024) Desire for exploration beats price: Empirical study on customer motives for using digital monetary food sharing platforms. *International Journal of Innovation and Sustainable Development*[1,2]*.*

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The paper has been accepted for publication. Publication is expected in the middle of 2024. The journal is an international publication focusing on the management of technology and innovation, renewable energy, sustainability, and the environment. SJR is 0.272 by 2022.

Paper IV: Winterstein, J., Zhu, B., & Habisch, A. (2024). How personal and social-focused values shape the purchase intention for organic food: Cross-country comparison between Thailand and Germany. *Journal of Cleaner Production*[1,3], 434, 140313. https://doi.org/10.1016/j.jclepro.2023.140313

[1] Double-blind peer-reviewed publication
[2] VHB JOURQUAL3: C
[3] VHB JOURQUAL3: B

Contributions

For reasons of transparency, the following paragraphs describe the author's contributions to each of the aforementioned papers.

Paper I is co-authored with André Habisch. It is based on the research idea by both authors. The conception as well as review and editing of the paper was a joint task. The author of this dissertation was responsible for writing, the methodology, data collection and curation, statistical analysis and visualization, as well as for the publication administration, serving as the corresponding author.

Paper II is single-authored by the author of this thesis.

Paper III is co-authored with Fiorella Frank and André Habisch. It is based on a research idea by Frank and Habisch. Frank conducted the data collection. The author of this dissertation was responsible for writing, the methodology, statistical analysis, visualization, and publication administration, serving as the corresponding author.

Paper IV is co-authored with Bing Zhu and André Habisch. Therein, conceptualization, supervision, and reviewing were joint tasks of all three authors. Together with Bing Zhu, the author of this dissertation did the data curation, formal analysis, investigation, data validation, visualization, and writing. The author of the dissertation has taken over the project and publication administration, also serving as the corresponding author.

1 Relevance of Sustainable Food

Adequate food is crucial for health, well-being, and development. It comprises the right amount of food as well as the right nutrients, embedded in the respective cultural context. While efforts have historically targeted malnutrition, micronutrient deficiencies coexisting with overweight and obesity new challenges emerged in the past decades (PAHO, 2018). Global food insecurity has been on the rise as global warming influences weather patterns, giving rise to heat waves, heavy precipitation, and droughts, consequently leading to crop failures and poor harvests. Simultaneously, the contemporary mode of food production constitutes a substantial aspect of the predicament. Recent estimates reveal that the global food system accounts for roughly one-third of greenhouse gas emissions, ranking second only to the energy sector (Crippa et al., 2021; The World Bank, 2022). The primary sources of food-related greenhouse gases and environmental pollution are related to agriculture and land use. This encompasses e.g., methane from cattle digestion, nitrous oxide from fertilizers, and carbon dioxide from deforestation for farmland expansion. A smaller proportion of greenhouse gas emissions can be attributed to food transportation, refrigeration, industrial processes for packaging, and food waste management (United Nations, 2023). Accordingly, the food we consume and its production methods impact not only our health but also the environment. These developments have opened up a vast field of research that will become increasingly important in the future to ensure global food security.

To address these issues, transformative changes toward sustainable food systems, ensuring healthy and sufficient nourishment for the global population are necessary; following the overall goal of sustainability to ensure food security and nutrition while safeguarding future economic, social, and environmental conditions (European Commission, 2023; PAHO, 2018). Willett et al. (2019) propose a planetary health diet, advocating for a decrease in red meat and sugar consumption while increasing the intake of fruits, nuts, vegetables, and legumes. Policy interventions are needed to promote access to healthy foods and discourage unhealthy choices. Agricultural priorities should shift towards diverse nutrient-rich crops, sustainable intensification, and reduced food loss and waste. Effective governance is essential for conserving ecosystems and promoting sustainable practices.

2 Conceptualization of Consumer's Decision-Making

A key success factor for the widespread implementation of sustainable food systems will be the motivation and decision-making processes of consumers (Hoek, Malekpour, Raven, Court, & Byrne, 2021; Namany, Govindan, Alfagih, McKay, & Al-Ansari, 2020; Vermeir et al., 2020). Hence, this dissertation aims to examine consumer behavior regarding sustainable food by analyzing various factors that influence consumers' decision-making. Each of the four papers presents different aspects and methodologies within the overarching context of sustainable food consumption, providing valuable insights into how consumers perceive and engage with these food options, contributing to theory as well as practice.

The Stimulus-Response model of Kotler (1997) offers valuable insights into individual consumer buying behavior, encompassing marketing and environmental stimuli as factors influencing decisions. Kotler's model visualizes the buyer's mental processes of decision-making as a black box and observes decisions such as for certain products, brands, or dealer choices. The broader Model of Consumer Behaviour by Kotler and Keller (2012) extends the model by considering the influence of consumer characteristics and consumer psychology on the decision-making process. Following the Stimulus-Response Model (Kotler, 1997) and the Model of Consumer Behaviour (Kotler & Keller, 2012) the four papers can be integrated within a conceptual model of sustainable consumer behavior, addressing multiple facets of decision-making (see Figure 1): consumer characteristics (Paper I: age), marketing stimuli (Paper II: cognitive measures as nudging and boosting), consumer psychology (Paper III: intrinsic and extrinsic usage motives), and environmental stimuli (Paper IV: cross-cultural perspective on values among Germans and Thais).

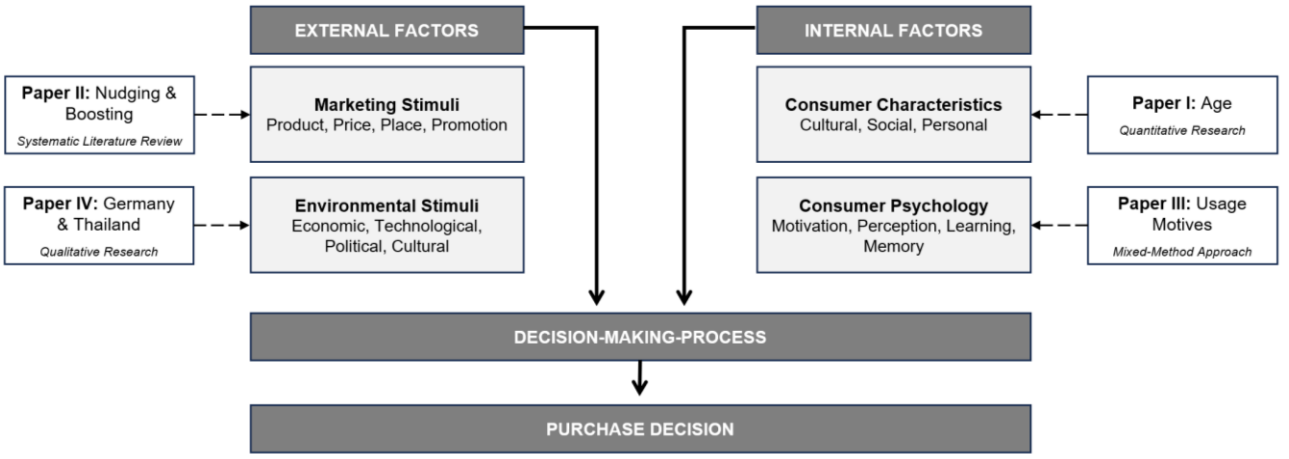

Figure 1: *Conceptualization of the dissertation papers following the Stimulus Response Model of Kotler (1997) and the Model of Consumer Behavior by Kotler and Keller (2012)*

Age can be assigned to a consumer's characteristics, that internally influence the decision-making process. Accordingly, Paper I contributes to the understanding of age's impact on preferences and willingness to pay for organic and local food, increasing scientific knowledge of age-related consumer behavior in the German market.

Alongside, consumer psychology can impact a decision, e.g. by individual motivation. Paper III addresses the issue of food waste, delving into the motives behind consumers' use of digital monetary food-sharing platforms. The paper contributes to the literature on the sharing economy, as it represents one of the first studies that empirically tests the ‘sharing-for-money’ model in the food sector.

Besides internal factors, there are also external factors affecting consumer decision-making: marketing and environmental stimuli. Paper II focuses on marketing stimuli comprising cognitively oriented nudges and boosts for promoting sustainable food choices, that can be attributed to promotional measures. Nudging and boosting are explored as effective mechanisms to influence consumer behavior toward low-carbon food options. The research helps to better understand consumer behavior toward sustainable food by providing an overview of which interventions exist and what is known about their efficacy, enriching the discussion on nudging and boosting.

Paper IV undertakes a cross-cultural comparative study to understand consumers' purchase intentions for organic food in Germany and Thailand, as environmental stimuli such as culture are also relevant to a decision. This paper represents the first study applying MEC theory in Thailand’s organic food field and one of the very few combining MEC and Schwartz Theory of Basic Human Value (STV) for organic food, contributing pioneer research on (Asian) organic food markets.

It should be noted that the assignment of the papers to the factors in the model is overlapping. For example, Paper IV not only considers external cultural stimuli but also consumer psychology, identifying factors that shape the purchase intention for organic food, assuming that people choose products with attributes that lead to desired outcomes or consequences, aligning with their values and life goals (Gutman, 1982; Reynolds & Olson, 2001). Paper I in turn not only observes the influence of age, as a consumer characteristic but also the effect of different product attributes such as 'Region of Origin,' 'Production Condition,' and 'Price' that refer to marketing stimuli as an external factor.

To fulfill the scholarly criteria of a doctoral dissertation, all four studies suggest empirical evidence, encompassing distinct methodological paradigms: quantitative investigation (Paper I: employing choice-based conjoint analysis), qualitative inquiry (Paper

IV: conducting one-to-one semi-structured interviews), a mixed-methods framework (Paper III: incorporating expert interviews for construct and hypothesis development, succeeded by a quantitative survey for validity assessment), and a systematic literature review (Paper II).

Furthermore, the individual papers pursue different theoretical approaches such as Nudging (Thaler & Sunstein, 2008) and Boosting (Grüne-Yanoff & Hertwig, 2016; Hertwig, 2017) in Paper II, Theory of Planned Behaviour (TPB; Ajzen, 1991), Self-Determination Theory (SDT) and Cognitive Evaluation Theory (CET; Deci & Ryan, 1985) in Paper III or Means-End Chain (MEC) Theory (Gutman, 1982; Reynolds & Olson, 2001) and STV (Schwartz, 2012; Schwartz et al., 2012) in Paper IV.

The findings are grounded in multiple datasets, encompassing both German consumer data (Paper I and III) and international consumer data. In the latter respect, an international systematic literature review was undertaken in Paper II. Additionally, the dataset in Paper IV comprises consumer data from Germans and Thais, necessitating close collaboration with Dr. Bing Zhu from Assumption University in Bangkok, Thailand.

3 Summary of the Papers

Paper I: Organic and Local Food Consumption: A Matter of Age? Empirical Evidence from the German Market

The first paper evaluates the importance of demographic factors in explaining consumer behavior toward organic and local food consumption, focusing on age-related market segmentation. Accordingly, aging brings with it changing needs, personal values, incomes, and lifestyles (Kumar, 2014). Previous research suggests that age effectively influences the intention to buy, as well as the willingness to pay (WTP) for organic food (Fotopoulos & Krystallis, 2002; Govindasamy & Italia, 1999; Magnusson, Arvola, Koivisto Hursti, Åberg, & Sjödén, 2001; Omar, Nazri, Osman, & Ahmad, 2017; Onyango, Hallman, & Bellows, 2007; Tsakiridou, Boutsouki, Zotos, & Mattas, 2008; Wier & Calverley, 2002). However, the observed effects vary considerably, with studies concluding that young people were more likely to purchase organic foods (Govindasamy & Italia, 1999; Magnusson et al., 2001; Onyango et al., 2007; Q. Wang & Sun, 2003), while others emphasized their lower willingness to pay (Fotopoulos & Krystallis, 2002; Tsakiridou et al., 2008) and still others found no such age-effects (J. Chen, Lobo, & Rajendran, 2014; McCarthy & Murphy, 2013; Yin, Wu, Du, & Chen, 2010; Zepeda & Li, 2006).

However, recent literature appears to neglect the role of age in purchase decisions for organic and local food. Additionally, the European and German markets lack sufficient research compared to the US. Therefore, this article aims to investigate how consumer age impacts preferences and WTP for organic and local foods, using a choice-based conjoint analysis with a total of 325 valid data sets.

The findings reveal that the attribute ‘Region of Origin’ had the highest relative importance within both groups. Also, all consumers, regardless of their age, preferred organic to conventional farming in the attribute ‘Production Condition’, and lower to higher prices. Older people attached little more importance to ‘Region of Origin’ and ‘Production Condition’, while people under 30 years were slightly more price-conscious. However, the choice simulation provided no clear evidence of a higher WTP among older people, as the accepted price premium only differed slightly. Those findings conclude that when it comes to WTP, marketers should remain aware of the fact that age is only a limited informational indicator. Nevertheless, the assumed lower price sensitivity among the elderly should be exploited, while special discounts for young consumers, for example for customers with a student ID, might be offered in supermarkets.

Paper II: Nudging and Boosting Towards Sustainable Food Choices – A Systematic Literature Review of Cognitively Oriented Measures

The second paper examines nudging and boosting as triggers for sustainable food choices (SFC). Nudging comprises interventions that alter people’s behavior without limiting their freedom of choice (Thaler & Sunstein, 2008). It has been proven to be an appropriate approach to influence consumers towards more SFC (Ferrari, Cavaliere, Marchi, & Banterle, 2019; Vandenbroele, Vermeir, Geuens, Slabbinck, & van Kerckhove, 2020). Boosting, an alternative gaining researchers' attention lately, promotes people’s education and competencies to induce autonomous decision-making (Grüne-Yanoff & Hertwig, 2016; Hertwig, 2017). Among them, cognitive interventions are of particular interest, as they trigger long-term changes in behavior and enable better, pro-environmental decision-making (Grüne-Yanoff & Hertwig, 2017; Reijula & Hertwig, 2020; Sunstein, 2016)

Research on nudging and boosting for SFC is in its early phase. Prior studies provide a foundation, but there is a need to synthesize existing interventions and their efficacy. Hence, this paper performs a systematic literature review to identify, classify, and evaluate evidence-based nudges and boosts for SFC. The sample consists of 217 English-speaking papers published between 2011 and 2021. After three filtering steps, 21 scientific journal

publications remained in the data extraction form. All articles are field experiments, comprising descriptive labeling, evaluative labeling, and visibility enhancements.

The findings show that 'visibility enhancements' (e.g. restructuring a restaurant's menu by placing a vegetarian option on the top of the menu) are the most effective intervention to reshape customers' demands (Campbell-Arvai, Arvai, & Kalof, 2014; Garnett, Balmford, Sandbrook, Pilling, & Marteau, 2019; Gravert & Kurz, 2021; Kurz, 2018). Evaluative labels (e.g., traffic-light labels on the menu or product packaging) are the second most effective measure (Brunner, Kurz, Bryngelsson, & Hedenus, 2018; Slapø & Karevold, 2019; Vanclay et al., 2011). They help people understand eco-related information and thus make better decisions. The effect of descriptive labels seemed small, as they provide no meaningful frame assisting people in processing the data (Elofsson, Bengtsson, Matsdotter, & Arntyr, 2016; Filimonau, Lemmer, Marshall, & Bejjani, 2017; Spaargaren, van Koppen, Janssen, Hendriksen, & Kolfschoten, 2013). In conclusion, the research recommends applying cognitively-oriented nudges and boosts to marketers of grocery stores, restaurants, or food processing facilities to promote SFC in the long run. Specifically, restaurants should rearrange their menus, placing appealing vegetarian food at the top (or first), and grocery stores may set sustainable options in a more convenient position than conventional foods.

Paper III: Desire for Exploration Beats Price: Empirical Study on Customer Motives for Using Digital Monetary Food Sharing Platforms

The third paper addresses the problem of food waste, caused by products deviating from the optimal shape, size, or color, being too close to or beyond the 'best before' date, or simply leftovers from over-shopping or ordering (FAO, 2019; Ganglbauer, Fitzpatrick, Subasi, & Güldenpfennig, 2014). One frequently discussed instrument to reduce food waste in businesses is digital food sharing platforms (Michelini, Grieco, Ciulli, & Di Leo, 2020). Thereby, 'sharing-for-money' models provide online information concerning nearby locations such as restaurants or supermarkets that offer so-called 'leftover boxes', containing surplus food to be picked up by the consumer at a reduced price (Michelini, Principato, & Iasevoli, 2018). Yet, little is known about the motivation of consumers to use such monetary food sharing (MFS) platforms. Hence, this paper fills the gap as the first study that empirically tests customers' usage motives for MFS, as previous papers primarily focused on user descriptions (D'Ambrosi, 2018; Harvey, Smith, Goulding, & Branco Illodo, 2020; Schanes & Stagl, 2019).

The study used a developmental mixed method design, which is applied to develop constructs and hypotheses through exploratory qualitative research, followed by moving sequentially to a quantitative survey to check validity (Creswell & Plano Clark, 2011). Accordingly, based on the findings from in-depth expert interviews, a standardized online questionnaire was developed. Following the factor and regression analysis of the quantitative study, a structural equation model was run.

The qualitative research identified seven usage motives for MFS: economic benefit, convenience, sustainability, desire for exploration, enjoyment, social risk, and food neophobia. Economic benefit, sustainability, desire for exploration, and enjoyment were found to have a significant influence on behavioral intention to use MFS in the quantitative research. Based on the conceptual integration of the TPB from Ajzen (1991), SDT by Deci and Ryan (1985), and CET (Deci & Ryan, 1985) and the empirical findings, the study assumes that intrinsic motivation, including the constructs of sustainability, desire for exploration, and enjoyment, has a significantly rather strong influence on behavioral intention to use digital MFS platforms, whereas extrinsic motivation, such as economic benefit, had only a small influence.

Concluding, the paper suggests a more significant influence of the desire to explore new food than previous literature which assigned the greatest importance to the perceived economic benefit (Belk, 2010; Michelini et al., 2018), providing a starting point for future research. MFS providers should offer exploratory experiences to increase platform usage. Therefore, the ‘surprise factor’ of not knowing what food to receive and the possibility to try out new things should be highlighted to the consumers – not the reduced price or sustainability of the offer.

Paper IV: How Personal and Social-focused Values Shape the Purchase Intention for Organic Food: Cross-country Comparison between Thailand and Germany

The fourth paper applies MEC theory to identify factors that shape the purchase intention for organic food, as this is decisive and helps marketers and researchers to better address people's needs and shape sustainable food consumption in the future (Thøgersen, 2009). The MEC theory examines consumers’ decision-making, by assuming that people choose products with attributes that lead to desired outcomes or consequences, aligning with their values and life goals (Gutman, 1982; Reynolds & Olson, 2001). However, MEC theory has hardly been used to identify drivers of consumers‘ organic food choices. The few published studies indicate that people in emerging (e.g. Taiwan) and mature markets (e.g.

Italy, Germany, or the US) associate organics with health, good taste, rich nutrition, environmental protection, and food safety (Baker, Thompson, Engelken, & Huntley, 2004; N.-H. Chen, Lee, & Huang, 2015; Haas, Sterns, Meixner, Nyob, & Taar, 2013; Zanoli & Naspetti, 2002).

As limited knowledge exists on the linkages between organic food attributes, functions, and consumers' underlying values shaping purchase intention (Baker et al., 2004; X. Wang, Pacho, Liu, & Kajungiro, 2019), this paper aims to provide insights into consumer motives in different cultural contexts. Thereby, the study conducted 61 one-to-one semi-structured interviews, addressing consumers from the world's second-largest market for organics, Germany (BÖLW, 2022), and Thailand, where the organic food industry is still a niche market (Statista, 2021; Theparat, 2020). Accordingly, the MEC study discovered how consumers associate attributes of organic food with corresponding values and interpreted and compared them referring to the Schwartz Theory of Basic Human Value (Schwartz, 2012; Schwartz et al., 2012).

The findings show a rather similar values base of both samples in terms of the relevance of 'quality of personal life' and 'personal well-being', comprising enjoyment, pleasure, good mood, leisure, and relaxing time. Various researchers have already proven that consumers connect organic food with a comfortable and enjoyable life, e.g. in Australia (Kirchhoff, Smyth, Sanderson, Sultanbawa, & Gething, 2011), Germany (Baker et al., 2004) and Taiwan (N.-H. Chen et al., 2015). Substantial differences emerged in the Germans high emphasis on the values 'health of environment', focusing on an intact ecosystem, plants, and animals, and 'social responsibility', including civic duty and the consideration of society at large, which were absent in Thailand. In contrast, Thais put great emphasis on the 'responsibility for family'. Focusing on the five most important values in each country, the authors conclude a more personal-focused value system in Thailand, respectively a rather social-focused one in Germany, and therefore considerable differences in the underlying values-perception when buying organic food.

The authors recommend that marketers incorporate the findings on similarities and differences in consumers' underlying values system in diverse cultural contexts to tailor marketing strategies effectively, leading to more targeted communication and sales of organic products. Moreover, this paper represents the first study applying MEC theory in Thailand's organic food field and one of the very few combining MEC and STV for organic food, contributing pioneer research on (Asian) organic food markets.

4 Conclusion

The four papers explore different aspects of how consumers make decisions related to sustainable food choices. In doing so, they observe cognitive processes and psychological motives, applying existing theories and models to explain consumer behavior. Each paper concludes with theoretical and practical suggestions for stakeholders to effectively influence consumer behavior.

The dissertation helps to gain a comprehensive understanding of the factors that influence sustainable consumption behavior and identify strategies to promote more sustainable consumer choices. Each paper makes a unique contribution to this overarching goal by exploring different aspects of the topic and applying different research methods and approaches.

In the broader context of the multidimensional model, following the Stimulus-Response Model of Kotler (1997) and the Model of Consumer Behaviour by Kotler and Keller (2012), the four papers collectively contribute to understanding the complexities of sustainable consumer behavior. Each dimension – demographic, cognitive, psychological, and cultural – intersects and interacts in shaping consumers' decision-making and behaviors toward sustainable food consumption. Despite the differences, all papers jointly contribute to our understanding of the multilayered nature of sustainable consumer behaviour. They complement each other, forming a more holistic view of how consumers make sustainable food choices.

The proposed papers could serve as a theoretical and empirical basis for future research in this area and to formulate effective interventions to promote sustainable food consumption.

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6 Papers of the Cumulative Dissertation

6.1 Organic and Local Food Consumption: A Matter of Age? Empirical Evidence from the German Market

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ORGANIC AND LOCAL FOOD CONSUMPTION: A MATTER OF AGE? EMPIRICAL EVIDENCE FROM THE GERMAN MARKET

Julia Winterstein[1,*] and André Habisch[2]

Abstract

Given the varied experiences and preferences in the course of different people's lives, demographic factors could be an important factor in explaining consumer behaviour. In the literature, however, there is no common view concerning its capacity as a predictor of demand for organic products. Therefore, this article analyzes the willingness of consumers to pay for organic and local food depending on their age. Focusing on the product attributes of 'Region of Origin,' 'Production Condition,' and 'Price', it utilizes a choice-based conjoint analysis to assess the responses of 325 respondents from different age groups in Germany. A general preference for local as well as organic food was noted among all age groups. Thereby, slightly more people over or equal to 30 years perceived the (local) region of origin as well as organic production conditions as important. Younger people also seemed more price sensitive. Choice simulations, however, identified only minimal deviations in the WTP - indicating almost no differences among the age groups. Managerial implications for appropriate marketing and subsidy policy are deduced.

Keywords: Local foods, Organic foods, Age differences, Demographics, Willingness to pay

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1. INTRODUCTION

Child, adolescent, adult, and senior, or Baby Boomers, Generation X, Millenials, and Digital Natives: age-related market segmentation is a common practice as consumption patterns and buying behavior change with increasing age. The underlying question is how typical customers can be described and consequently targeted based on their demographics. Accordingly, aging brings with it changing needs, personal values, lifestyles, and income. The relevance of customer demographics to marketers also applies to the food sector where people generally become more health-conscious as they grow older (Kumar, 2014). Influencing customers towards the consumption of organic and local food is of great interest, as dietary choices can essentially contribute to preserving soil, water, and biodiversity, reducing food-related energy consumption, and lowering food miles (Born & Purcell, 2006; FAO, 2020). As stated by governmental institutions, the label 'organic' defines the minimum requirements for arable farming and animal husbandry such as restrictions on fertilizers, appropriate housing conditions, or a ban on preventive antibiotics (USDA, 2020b). The term 'local' can be interpreted as the production, processing, and commercialization of a product within a defined geographic region (USDA, 2020a). Consequently, 'organic' refers to environmentally friendly and sustainable production conditions, while 'local' refers solely to a product's origin.

The overall share of organic product sales is rather low, reaching 5.9% in the USA, 5.3% in Germany, and only 0.2% in Vietnam (FiBL & IFOAM, 2020). Food products from local origin only achieve a market share of 1.9% (HDE, 2019). Yet, the market shares for these foods are increasing, with local products growing in popularity, indicating a shift in preferences from organic towards local (Hempel & Hamm, 2016). This trend can also be explained by the fact that Germans buy organics especially due to animal welfare and to support regional businesses; the latter one highlighting the importance of the food concept 'local' (BMEL, 2020).

As interest in organic and local foods grows, various recent studies have attempted to analyze the demand structure more precisely. Results suggest that age effectively influences the intention to buy, as well as the willingness to pay (WTP), regarding organic food (Fotopoulos & Krystallis, 2002; Govindasamy & Italia, 1999; Magnusson, Arvola, Koivisto Hursti, Åberg, & Sjödén, 2001; Omar, Nazri, Osman, & Ahmad, 2017; Onyango, Hallman, & Bellows, 2007; Tsakiridou, Boutsouki, Zotos, & Mattas, 2008; Wier & Calverley, 2002). However, older research results concerning the question vary considerably. Some studies found that young people were more likely to purchase organic foods (Govindasamy & Italia, 1999;

Magnusson et al., 2001; Onyango et al., 2007; Wang & Sun, 2003), while others emphasized their lower willingness to pay (Fotopoulos & Krystallis, 2002; Tsakiridou et al., 2008); other authors observed no such age-effects (Chen, Lobo, & Rajendran, 2014; McCarthy & Murphy, 2013; Yin, Wu, Du, & Chen, 2010; Zepeda & Li, 2006).

Especially considering recent literature, the question of the role of age in purchase decisions for organic products seems to have been neglected. Furthermore, compared to literature from the US, the European and German markets seem to be an under-researched area making further contributions to research a necessary endeavour. Hence, the objective of this study was to examine the influence of consumer age on preferences and WTP in relation to organic and local foods, utilizing a choice-based conjoint analysis. By adding reliable knowledge from the German market, the study contributes substantially to knowledge of sustainable marketing strategies in terms of target group specification and effective communication.

2. LITERATURE REVIEW

In many countries, food markets are highly competitive thereby granting more and more power to consumers (Fotopoulos & Krystallis, 2002). This situation has forced marketers to identify target groups carefully, to improve their ability to come up with tailor-made marketing concepts. Several approaches have been applied for defining and segmenting customers in the organic and local food market. Commonly used are socio-demographic characteristics (Dettmann & Dimitri, 2007; McCarthy & Murphy, 2013; Omar et al., 2017), consumer attitudes (Fotopoulos & Krystallis, 2002; Magnusson et al., 2001; Tsakiridou et al., 2008), and combinations of both features (Chen et al., 2014; Lea & Worsley, 2005). Demographic analyses have an advantage over such methods in that there is greater ease of data collection (Myers, 1996) and versatility (Blackwell, D'Souza, Taghian, Miniard, & Engel, 2006).

Previous studies on consumer demographics suggest that organic and local food consumption is primarily influenced by gender, age, level of education, and income (Govindasamy & Italia, 1999; Magnusson et al., 2001; McCarthy & Murphy, 2013; Onyango et al., 2007; Tsakiridou et al., 2008). For marketers, age-related segmentation is of particular importance regarding consumer activities and behavior, which subsequent to customers varying needs, change over time (Kumar, 2014). Suitable marketing strategies are derived from certain age groups as age influences media consumption and therefore alters the consequent effect of specific advertising measures. As a result of a higher life expectancy, marketers should not fall for stereotypes - as age is no longer a reliable predictor for consumers' life cycles, health, marital status, or professional activities (Kotler & Armstrong, 2014). To make

good marketing decisions, it is all the more important to have a precise understanding of age-related consumer behavior.

Accordingly, researchers' interest in the influence of age on purchase intentions, consumer attitudes, and WTP regarding organic and local foods has existed for several decades. Thirty years ago, Jolly (1991) examined the differences between buyers and non-buyers of organics, and the factors that influence their respective consumer behavior. This US-based study found the typical organic food customer to be on average 40.9 years old, and therefore rather young compared to the typical non-buyer whose average age was 48.6 years. Complementarily, a study on local foods at small farmer's markets in Maine described the typical organic consumer as aged over 35. Though, this result is based on the characterization of a typical customer, the age referred to females and is therefore not generally applicable to all sexes (Kezis, Gwebu, Peavey, & Cheng, 1998). Govindasamy and Italia (1999) confirmed the findings as they characterized organic food purchasers in New Jersey to be rather young individuals. The authors also found that people under 36 showed the highest WTP premium prices, while those aged 65 years or older exhibited the lowest acceptance to do so.

Further research in this field continued in the new millennium. Swedish researchers for example, found younger consumers (18-25 years old) to possess the highest interest in buying organic potatoes and bread compared to those aged 26-65 (Magnusson et al., 2001). In a similar vein, Greek researchers (Fotopoulos and Krystallis, 2002) confirmed that younger consumers (under 40) seemed slightly more willing to buy organic food due to their greater environmental consciousness compared to those who were older. However, due to younger people's lower purchasing power, their greater interest did not result in an increasing demand. Rather, older people appeared more willing to pay, due to increased health consciousness. Wier and Calverley (2002) compared European studies on the relationship between organic food buying propensity and demographic characteristics, describing the typical consumer as aged under 45, thus also rather young. Therefore, it is noted that the demographic findings of most European surveys comply with those of similar American consumer studies. Contrary to this general finding, however, young Greek consumers showed a lower level of environmental behavior. More precisely, the researchers found a significant negative correlation between age and environmental attitude (-.1403) but no significant correlation between age and purchasing behavior (Diamantopoulos, Schlegelmilch, Sinkovics, & Bohlen, 2003). Even in the US state of Vermont, Wang and Sun (2003) identified young consumers as the most likely buyers of organic food. They also suggested that young consumers with higher

incomes seemed more willing to pay premium prices for organic produce. Similarly, Lea and Worsley (2005) observed that Australians under 40 years old perceived organic food as more important than those over 40, even though the higher prices represented a purchase barrier for the participants. A nation-wide study among US-customers determined that people under 32 years old were most likely to buy organic food regularly (Onyango et al., 2007). The purchase probability in this group was 8 percent higher than that of the 33-52 years-olds. Additionally, among customers over 52 years of age, a negative relationship was found between age and organic food purchases. In an almost simultaneous study, Tsakiridou et al. (2008) dealt with the influence of age on attitude towards organic food; they concluded that people older than 51 years considered organic foods as healthier and of better taste and quality than those between 18 and 30 years. Hence, younger customers seemed less interested in organic produce, indicating a less positive attitude towards it. Correspondingly, older people displayed a higher WTP, while the younger ones seemed more price-sensitive and less willing to pay a price premium.

This observation also applied to local food consumption in South Carolina, where Carpio and Isengildina-Massa (2009) suggested a positive relationship between consumer age and the acceptance of a price premium. Accordingly, they observed an increase in the WTP of 0.3% (for local produce), and a further 0.2% (for local animal products) with each additional year of age. In Malaysia too, organics appeared to be more popular with younger consumers. The results showed that consumers under 40 years had an appreciably higher intention to buy organic food than those over 40. The highest mean score was reached by those under 20 (Omar et al., 2017). Other studies, however, found that age did not influence the probability of buying organic food. For example in China, Yin et al. (2010) surveyed consumers' buying intentions for organic food, indicating a very low impact of age as an influencing factor. In general, the purchase intention seemed to increase with the consumer age. Also, Chen et al. (2014) found no significant effect of age on purchase intentions for organic food among Chinese. Accordingly, age affected only 2% of the variation in the purchase intentions of stage 1 in a hierarchical regression analysis. Stage 2 revealed no such correlation. Furthermore, an Australian study by McCarthy and Murphy (2013) concluded that age is not a significant variable with which the typical organic customer can be described. Zepeda and Li (2006) too examined age, concluding that it was not a reliable indicator for the probability of purchasing local foods in the USA.

Generally speaking, even though several studies have examined the predictive power of age as an indicator of organic and local food consumption, these findings represent more of a by-product of other research

priorities. In fact hardly any studies exist which are specifically dedicated towards the topic of 'Age' in the context of organic and local foods. This is despite the fact that this under-researched area is of great interest for marketers, as it is relevant to understand how young generations will behave as consumers and what drives them. In 2019, 26% of the global population was aged under 15 and a whopping 42% were aged under 25. The market segment of young people therefore represents a key factor for the development of global organic and local food consumption. This holds especially true for the Asia Pacific region, where almost 60% (over 700 million people) of the world's 15-24 year olds live (UN, 2020). Thus, further empirical research to better understand the influence of consumer-age on organic and local food consumption is urgently required. Albeit the presented studies remain ambivalent concerning the effect of age. There is however, an assumed influence of age on the preference and WTP regarding organic and local food. Hence, this study offers the following hypotheses:

- *H1* Consumers under 30 attach more importance to organic food than older ones.
- *H2* Consumers under 30 attach more importance to local food than older ones.
- *H3* Consumers aged 30 or older are more willing to pay a price premium for organic food than younger ones.
- *H4* Consumers aged 30 or older are more willing to pay a price premium for local food than younger ones.

3. METHOD

The purpose of the quantitative research was to identify the influence of age on the preference and WTP for the attributes of 'organic' and 'local' among fresh produce. To gain more realistic insights into consumer behavior, a choice-based conjoint analysis was conducted to identify the part-worth utilities and the relative importance of the product properties. Thereby, choice-based conjoint analysis was preferred over traditional conjoint analysis as it simulates a more realistic purchase situation due to the choice of one product from a set of differently compound products rather than a ranking of single characteristics, as well as the integration of a none-option (Backhaus, Erichson, & Weiber, 2013). Additionally, this analysis method has been used for similar studies on the WTP for organic and local food (Darby, Batte, Ernst, & Roe, 2008; Hempel & Hamm, 2016; Meyerding & Merz, 2018). Focusing on the food concepts 'local' and 'organic', the influence of the attributes 'Region of Origin', 'Production Condition', and 'Price' (independent variables) on respondents' preference (dependent variable) was examined. For this purpose, attributes and attribute levels were adopted from previous studies (Bech-Larsen & Grunert, 2003; Onozaka & McFadden, 2011). More precisely, the survey design

comprised ten choice sets where respondents were required to choose between two product alternatives and a none-option. Five sets each focused on apples and carrots as these products are among the most common fruits and vegetables in Germany (BMEL, 2017). The survey concluded with several demographic questions. To check the experimental design for adequate precision, a preliminary counting test was carried out, showing an overall good quality for a sample size of N = 300 ($p < 0.05$ for main effects, D-efficiency 505.3). Six individuals took part in a pre-test of the survey, reviewing the contents and scales for validity.

The anonymous online questionnaire was distributed through email and social media channels, aimed at all Germans who regularly bought food. The data were collected through a convenience sample in December 2019, with a total of 325 valid data sets obtained for analysis. The sample was composed of German consumers, of which 60.3% were female, and ranging from 16 to 85 years of age (MED = 26, AM = 29.6, SD = 12). The majority of respondents had a university degree (49.5%) and a net income of up to 2,000 € (60.0%).

The study used the Sawtooth software 'Lighthouse Studio' to carry out the choice-based conjoint analysis and choice simulations. 'Aggregate Logit' provided an initial assessment, while 'Hierarchical Bayes' was applied for the final modeling as its individual-level estimations allow more accurate calculations of the preferences and market simulations (Sawtooth Software, 2019b). Two age groups were defined for the analysis: younger than 30 years (76.3% of all respondents), and 30 years or older. The group allocation was based on the definition of 'young consumers' by the German Federal Ministry of Justice and Consumer Protection (BMJV, 2020).

4. RESULTS

The results of the pre-test with the Aggregate Logit model were statistically significant at the level of $p < 0.01$. Accordingly, the study assumes a good overall quality for the Hierarchical Bayes analysis, as the goodness of fit of the estimates can be assessed by the significance of the Aggregate Logit model (Sawtooth Software, 2019a).

The findings of the Hierarchical Bayes analysis showed that the attribute 'Region of Origin' had the highest relative importance (RI) and that the attribute level 'Home Federal State' had the highest part-worth utility within both groups. All consumers, regardless of their age, preferred organic to conventional farming in 'Production Condition', and lower to higher prices. The preferences for the attribute levels can be derived from the differences between the part-worth utilities, as this determines the probabilities in the choice model (Backhaus et al., 2013). However, older people attached a little more importance to the region of origin (RI 43.5% vs. 47.9%; 49.7% vs. 52.7%) and production condition (RI 22.0% vs. 25.1%; 25.3% vs.

32.1%), while people under 30 years were more price-conscious (RI 34.5% vs. 27.0%; 25.0% vs. 15.2%). Thus, hypotheses *H1* and *H2* were rejected while *H3* and *H4* were supported. Table 1 summarizes the results of the Hierarchical Bayes analysis.

Subsequently, numerous choice simulations were utilized to derive the WTP for organic and local food among the two age groups. A price premium was considered as accepted if the purchase probability of the more sustainable product was above 50.0%, when the purchase probability of all 3 product options (i.e. sustainable option, regular option, and none-option) totalled 100%.

While the Hierarchical Bayes analysis found young consumers to be more price-sensitive, differing by 7.5 and 9.8 percentage points respective to the RI of the older consumers (28% and 64%), the choice simulations found almost no deviation. Based on 28 juxtaposed product combinations, only two differences could be identified in the WTP. Firstly, people under 30 years did not accept a price premium of 200% for German organic apples, while the older respondents did. Secondly, younger people were

Table 1: Relative importance of attributes and part-worth utilities of attribute levels

Attribute		**Apples**			**Carrots**		
Attribute Level		**All**	**< 30**	**>= 30**	**All**	**< 30**	**>= 30**
Region of Origin	**RI**	**44.7%**	**43.5%**	**47.9%**	**51.2%**	**49.7%**	**52.7%**
Home Federal State	Utility	54.5	53.9	54.6	63.7	61.4	63.5
Germany	Utility	24.5	22.2	32.8	24.6	24.4	30.1
Worldwide	Utility	-79.0	-76.1	-87.3	-88.3	-85.8	-93.6
Production Condition	**RI**	**22.4%**	**22.0%**	**25.1%**	**26.9%**	**25.3%**	**32.1%**
Organic	Utility	33.3	32.7	36.5	39.7	37.6	47.6
Conventional	Utility	-33.3	-32.7	-36.5	-39.7	-37.56	-47.6
Price	**RI**	**32.9%**	**34.5%**	**27.0%**	**21.9%**	**25.0%**	**15.2%**
1.25€ / 0.50€	Utility	41.4	43.3	32.0	29.7	34.4	11.6
1.88€ / 0.75€	Utility	18.3	21.4	19.5	10.1	10.8	12.3
2.50€ / 1.00€	Utility	-3.8	-5.8	-4.3	-5.7	-5.9	-3.5
3.75€ / 1.50€	Utility	-55.9	-59.0	-47.2	-34.1	-39.2	-20.3

willing to spend less than 200% for organic carrots from worldwide sourcing, while older people accepted only a 50% to 100% price premium for this product. Hence, *H3* and *H4* were minimally supported. For the summarized findings on WTP, see Table 2.

5. DISCUSSION

5.1 Preference and Willingness to Pay for Organic and Local Food

Based on the results of the choice-based conjoint analysis, several age-related effects were identified regarding the consumption of organic and local food. Results show that respondents, independently of their age, prefer organic over conventional farming and local over worldwide sourcing, confirming that both older and younger consumers have a general preference for organic and local food.

However, differences do exist between the age groups; the first of these is in the RI of the product attributes. As depicted in Table 1, the RI of 'Region of Origin' differed for both apples and carrots, with the older age group having an RI value 10% higher than the younger age group regarding the purchasing of apples, and 6% higher regarding the purchasing of carrots, indicating that

Table 2: Willingness to pay among the two age groups

	Product Properties*	< 30**	>= 30**
Apples	HFS, organic	>= 200%	
	GER, organic	< 200%	>= 200%
	WW, organic	≈ 0%	
	HFS, conventional	>= 200%	
	GER, conventional	≈ 100%	
Carrots	HFS, organic	>= 200%	
	GER, organic	>= 200%	
	WW, organic	< 200%	50-100%
	HFS, conventional	>= 200%	
	GER, conventional	>= 200%	

* Region of Origin: Home Federal State (HFS), Germany (GER), worldwide (WW); Production Condition: organic and conventional farming
** Age-related WTP compared to conventional food from worldwide sourcing

H2 should be rejected. Regarding 'Production Condition', the difference between the RI for the two age groups is even greater, being 14% and 27% higher in the older age group, for apples and carrots respectively. Again this leads to the rejection of *H1*. These findings suggest that older consumers prefer organic and local food more than younger ones, indicating that the typical shopper of these products is more likely to be 30 years or older. Therefore, the results contradict those of Jolly (1991), Govindasamy and Italia (1999), Magnusson et al. (2001), Fotopoulos and Krystallis (2002), Wang and Sun (2003), and Onyango et al. (2007), who found young people to be the main organic food purchasers. Only the results on local food match the existing literature by Kezis et al. (1998) who described shoppers at the small farmer's market to be slightly older.

This observation is surprising, as especially young people seem to be increasingly confronted with topics regarding environmental protection and sustainability in the course of their education. It indicates that their greater knowledge of sustainability does not seem to result in corresponding consumer behavior. A possible explanation for the deviations from other studies could be the survey period. Accordingly, the studies mentioned were conducted between 13 and 30 years ago. The people surveyed during this time have grown older so that they would be more likely to be assigned to the older age group in the current study. Nonetheless, the question arises why today's younger generation seem uninterested in organic and local food. One suitable explanation for the results comes from the work of Diamantopoulos et al. (2003), who found both a higher awareness of environmental quality and an accompanying lower level of environmental behavior among young people, when compared to older consumers. The authors perceived the reason for this discrepancy as a higher price sensitivity among young consumers as well as their different needs. As mentioned in the literature review above, the need for and also the consciousness of health changes with age. Wier and Calverley (2002) concluded that young people tend to buy organic and local food for health reasons, while older people focus rather on health concerns. Consequently, health concerns might have more influence on buying behavior than health reasons.

The idea that young consumers are more price-conscious and therefore less interested in expensive organic and local food can be deduced from the RI of the attribute 'Price'. The RI of price was higher in the younger age group than among the older respondents, with RI values 28% and 64% greater for the younger respondents for apples and carrots respectively, thus supporting *H3* and *H4*. This finding is in line with the previous studies of Fotopoulos and Krystallis (2002) and Tsakiridou et al. (2008), according to which young consumers were less willing to pay a price premium for organics. Consistent with the findings of

Tsakiridou et al. (2008), Carpio and Isengildina-Massa (2009), and Nguyen, Nguyen, and Hoang (2019), this assumption might be traced back to the positive effect of income on the WTP a premium on organic and local foods. Accordingly, younger people tend to earn less money, for example, due to having less work experience, and therefore cannot spend as much. Although, it should be noted that budget constraints would also apply to older people who have less income in their retirement.

However, the choice simulation provided no clear evidence of a higher WTP among older people, as the accepted price premium only differed slightly. Thus *H3* and *H4* were only supported minimally. Hence, one possible conclusion is that the younger generation might be equally interested in organic and local food, but that their preference is being offset by age-related budget restrictions. The lower RI of the attributes 'Region of Origin' and 'Production Condition' among the young respondents would therefore result from their lower available budgets, and not from generally lower interest. Hence, the lower preferences arise from the fact that organic and local foods *are still more of a luxury good* due to their higher prices which younger consumers are consequently least able to afford. Based on Krystallis, Fotopoulos, and Zotos (2006), this derivation might also correspond to the assumption that income does not necessarily affect the WTP but rather the number of purchased goods.

5.2 Implications

Generally speaking, the theoretical contribution of this study to the literature on organic and local food consumption is twofold. This research contributes (1) to the understanding of the influence of age on the preference and WTP for organic and local foods and (2) to scientific knowledge of age-related consumer behavior in the German market. There are social and managerial implications which are closely related to this study. Hence, age-specific marketing strategies may not only lead to an increase in income for retailers and producers but also a reduction in the negative impact of agriculture on climate change by influencing customers' buying decisions.

To increase the demand for organic and local food, and thereby contribute to more sustainable dietary choices, marketers should first develop marketing strategies for older consumers, as they appear to be the current major target group. For marketing measures, it can be concluded that consumption among older people can be promoted by addressing health benefits that fit their concerns. For example, the absence of fertilizers and pesticides in organic food production can have a positive advertising effect, as the human body does not absorb any harmful toxins by consuming such foods.

Since young consumers represent a critical success factor for increasing organic and local food consumption, marketers should try to further arouse

their interest in these foods. One opportunity for reaching young people could be through underlining the health benefits that meet their lifestyle, such as the idea that an organic and local diet might increase well-being and focus, provide energy, or delay the effects of aging.

When it comes to WTP, marketers should remain aware of the fact that age is only a limited informational indicator. Nevertheless, the assumed lower price sensitivity among the elderly should be exploited, while special discounts for young consumers, for example for customers with a student ID, might be offered in supermarkets. For age-related advertising, it is thus not only the marketers who are responsible but also supermarkets and discounters, as they are closest to the customers and can therefore have the greatest influence on them. Furthermore, political subsidies for organic and local agriculture would also allow prices for young consumers to be reduced. In this way, organic and local food could be made more affordable for the young target group. A positive side-effect of this approach would be that buying habits are acquired among young consumers in the long run, which increases the demand of tomorrow.

6 CONCLUSION

6.1 Key Findings

The purpose of this study was to examine the influence of age on the preferences and WTP of German consumers in the context of organic and local foods. With the utilization of a choice-based conjoint analysis, this study verified the results of existing research in the German market. Contrary to previous findings, the study suggests that organic and local food shoppers tend to be older, typically aged over 30 years. This result is derived from the difference in the RI of the attributes 'Region of Origin' and 'Production Condition'. Up-front, both age groups showed a general preference for local and organic foods. In terms of the WTP, however, the Hierarchical Bayes analysis emphasized younger consumers as more price-sensitive, while in the choice simulations age had almost no influence on the WTP. In conclusion, younger age seems to be a suitable indicator for a positive preference concerning organic and local foods but not for WTP, as the budget restriction seems to primarily dominate young consumers' preferences. From a marketing perspective, the study suggests highlighting the health benefits of organic and local foods in such a way that young people see their health reasons fulfilled, while older people should have their health concerns resolved. A subsidy policy would meet the factor of a lower WTP among young consumers - thereby increasing the demand for organic and local food in the long run.

6.2 Limitations and Future Research

Despite its contribution to the

understanding of the impacts of age on the consumption of organic and local food, the existing research is not without limitations. First, the study relied on self-reported data from an online convenience sample. The findings might therefore not be representative and be biased by social desirability. Despite the limited generalization, convenience sampling is deemed appropriate for examining underlying theoretical concepts and relationships (Jager, Putnick, & Bornstein, 2017). However, use of different sampling strategies and real purchase data is recommended for futher research, to achieve higher external validity. Secondly, Hierarchical Bayes analysis assumes a normal distribution in the population. The disproportionate age distribution in the sample could have negatively affected the goodness of the part-worth estimation, even though the model uses individual parameter estimates (Fuchs & Schwaiger, 2007). Future research should therefore pay attention to balanced samples or might use other evaluation techniques such as 'Latent class'. Thirdly, the study only focused on the demographic characteristic of 'Age', and focused solely on the German market. Hence, the results might not be generalized among other demographic features or countries. Further investigation should examine additional states and demographics such as education, ethnicity, or family size. Additionally, the study design might be utilized in Asian regions as the population is rather young, increasing the relevance of subsequent research.

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6.2 Nudging and Boosting towards Sustainable Food Choices – A Systematic Literature Review of Cognitively Oriented Measures

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Abstract

Reducing food-related greenhouse gas emissions is one of the major tasks in the future, as food causes one-third of global emissions. Influencing customers' purchasing decisions towards low-carbon food is thus decisive. Nudging has been proven to be an adequate mechanism to influence people towards sustainable food choices. Another relatively new approach is boosting, which promotes people's education, inducing autonomous decision-making. In the context of sustainable food, research on nudging and boosting is still at the beginning. Therefore, this chapter conducts a systematic literature review to identify, classify and assess the potential of cognitively oriented nudges and boosts towards sustainable food choices. The sample consists of 217 English-speaking papers published between 2011 and 2021. After three filtering steps, 21 scientific journal publications remained in the data extraction form. All articles are field experiments, comprising descriptive labelling, evaluative labelling, and visibility enhancements. The analysis shows that menu restructurings (e.g. placing a vegetarian option on the top of the menu) in restaurants are the most effective intervention to reshape customers' demands. Evaluative labels (e.g. traffic-light labels on the menu or product packaging) are the second most effective measure. They help people understand eco-related information and thus make better decisions. The effect of descriptive labels seemed small, as they provide no meaningful frame assisting people in processing the data. In conclusion, the research recommends applying cognitively oriented nudges and boosts to promote sustainable food choices and deduces practical implications for appropriate implementation and marketing.

1 Introduction

The ecological sustainability of food is closely related to the emission of CO2 during production and processing. Worldwide, food causes 34% of greenhouse gas emissions. Agricultural production (e.g. emissions from manure and pasture management) accounts for 39% of the food-related emissions; transport for 5% (Crippa et al., 2021). Reducing the carbon footprint of food consumption is one of the more essential goals of the future, entailing dietary changes such as reduced meat consumption (Graham & Abrahamse, 2017) or a vegetarian diet (Lacour et al., 2018). Influencing customers' purchasing decisions in grocery stores and restaurants towards low-carbon food choices is thus decisive.

Nudging is an appropriate approach to influence consumers towards more sustainable food choices (SFC) (Ferrari, Cavaliere, Marchi, & Banterle, 2019; Vandenbroele, Vermeir, Geuens, Slabbinck, & van Kerckhove, 2020). The concept comprises interventions that alter people's behaviour without limiting their freedom of choice (Thaler & Sunstein, 2008). An alternative to nudging that is increasingly attracting researchers' interest is boosting: an intervention that promotes people's education and competencies to induce autonomous decision making (Grüne-Yanoff & Hertwig, 2016; Hertwig, 2017). Cognitively oriented interventions are of particular interest. They trigger long-term changes in behaviour and enable better, pro-environmental decision making (Grüne-Yanoff & Hertwig, 2017; Reijula & Hertwig, 2020; Sunstein, 2016).

Cognitively oriented interventions include 'descriptive labels' (e.g. information on foods' CO2 emissions) (Elofsson, Bengtsson, Matsdotter, & Arntyr, 2016; Filimonau, Lemmer, Marshall, & Bejjani, 2017; Spaargaren, van Koppen, Janssen, Hendriksen, & Kolfschoten, 2013), 'evaluative labels' (e.g. traffic-light labels for greenhouse gas emissions) (Brunner, Kurz, Bryngelsson, & Hedenus, 2018; Slapø & Karevold, 2019; Vanclay et al., 2011), and 'visibility enhancements' (e.g. restructuring a restaurant's menu) (Campbell-Arvai, Arvai, & Kalof, 2014; Garnett, Balmford, Sandbrook, Pilling, & Marteau, 2019; Gravert & Kurz, 2021; Kurz, 2018). However, research on nudging and boosting in the field of SFC is still in it's early phase. Previous studies offered a good starting point, whereas it seems necessary to synthesise information of which interventions exist and what is known about their efficacy.

For this purpose, the paper conducts a systematic literature review (SLR) to identify, classify, and assess the potential of evidence-based nudges and boosts towards ecologically SFC, using a framework by Cadario and Chandon (2020). The research contributes to the literature on sustainable food and consumer behaviour by providing an overview of interventions, enriching the discussion on nudging and boosting.

2 Main Body

2.1 Nudging

‘Nudging’ is an application of behavioural economics that is based on the research of Tversky and Kahneman (1974), incorporating systematic biases and heuristics in the psychology of decision making due to cognitive constraints. Thaler and Sunstein (2008) coined the term ‘nudge’. They described it as “any aspect of the choice architecture that predictably alters people’s behaviour without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid” (Thaler & Sunstein, 2008, p. 6). ‘Libertarian paternalism’ is a core principle of nudging, describing the possibility and legitimation to influence individuals’ behaviour while respecting freedom of choice (Thaler & Sunstein, 2003, 2008).

Based on Sunstein (2014), essential nudges for policy-making include, among others, default rules, simplifications, or increases in ease and convenience. One of the most prominent examples of nudging is the etching of a fly-image in the urinals at Schiphol Airport in Amsterdam in the early 1990s. This trick motivated men to aim at the fly what significantly improved the bathroom cleanliness as spillage on the floor was reduced by 80% (Thaler & Sunstein, 2008; Vicente, 2006). Another effective nudge is default settings on organ donor registrations, where people automatically participate unless they decide to revoke (Jachimowicz, Duncan, Johnson, & Weber, 2019).

Yet, nudging also met with criticism. Among others, it was criticised for its libertarian paternalism (Barton & Grüne-Yanoff, 2015; Rebonato, 2012), threatening people’s autonomy and manipulating them (Grüne-Yanoff & Hertwig, 2016; Heidbrink & Klonschinski, 2018), and its effectiveness (Bhargava & Loewenstein, 2015).

2.2 Boosting

‘Boosting’ is an approach based on behavioural science that promotes the education of individuals with new heuristics suited to increase autonomous decision making and self-control skills (Hertwig, 2017). Boosts are defined as “interventions that target competencies rather than immediate behaviour” – expanding (=boosting) people’s cognitive competencies and helping them to reach their objectives and make good decisions (Grüne-Yanoff & Hertwig, 2017, p. 977). Successful application requires the cooperation of the target person, restructuring of the choice environment, and/or expansion of individuals’ heuristic repertoire (Franklin, Folke, & Ruggeri, 2019; Grüne-Yanoff & Hertwig, 2016, 2017).

In a preliminary taxonomy, Grüne-Yanoff and Hertwig (2017) distinguished between short and long-term boosts: short-term boosts increase competencies mostly related to specific situations, while competencies arising out of long-term boosts are usually applicable to various contexts.

A frequently cited example of boosting is the change of statistical health information into a frequency (absolute risk) rather than a percentage or probability format (relative risk) (Grüne-Yanoff & Hertwig, 2016). For example, treatment efficacy should be described as ”One out of 100 patients…” rather than “The probability of… is 1%” as this helps people to adapt the information better, thereby avoiding confusion and deception (Covey, 2007).

2.3 Nudging vs Boosting – Substitute or Complement?

Nudges and boosts are effective interventions to influence people’s behaviour and decision making. Yet, it is not always easy to distinguish between both concepts. Grüne-Yanoff and Hertwig (2017) even stated that some nudges could also be classified as short-term boosts. Labels, for example, can have an educative character by offering easily understandable and transparent information, thereby requiring cognitive skills.

However, several characteristics exist in which nudging and boosting differ: Nudges aim to influence behaviour, while boosts are designed to increase competencies. The impetus for change is set externally with nudges; with boosts, it comes autonomous. Changes caused by boosts are long-lasting since they persist after the intervention has been removed, not so with nudges, where individuals usually return to their original behaviour. The transaction costs for nudges are significantly lower than for boosts (Grüne-Yanoff & Hertwig, 2016, 2017). Furthermore, boosts seem to appreciate the freedom of choice more, as their success depends on individuals' cooperation, whereas nudges seem less respectful of people’s autonomy (Buss & Westlund, 2018; Sunstein, 2016). It can also be assumed that people who actively apply a boost pursue the same goal as the initiative’s initiator. This is not necessarily the case with nudges (Grüne-Yanoff, 2018). Table 1 shows a summary of the mentioned differences.

	Nudges	Boosts
Intervention target	Behaviour	Competencies
Direction of decision	Set externally	Autonomous
Long-lasting behavioural effects	No	Yes
Transaction costs	Low	High
Respect autonomy	Rather no	Rather yes
Common goal (initiator and target group)	Not necessarily	Yes

Table 1: Nudges in comparison with boosts

Recently, some authors doubted the existence of a clear demarcation between boosts and nudges (Sims & Müller, 2019). They denounce, among others, that the active cooperation of individuals is not necessarily required for boosts, although it is part of the definition. To enable a distinction in the future, the authors suggest compiling a comprehensive list of examples and characteristics of boosts and nudges or distinguishing both concepts based on their underlying causal mechanisms.

Accordingly, the question arises whether nudges and boosts are rather substitutes or complements. Sunstein (2016) acknowledged that “some of the best nudges are boosts” (p. 10), thereby introducing the concept of ‘educative nudges,’ which require a certain level of motivation and cognitive effort including, e.g. warnings, labels and reminders. Based on Grüne-Yanoff and Hertwig (2017), educative nudges and short-term boosts are overlapping yet not completely interchangeable. Hence, Hertwig (2017) set up six rules to help policy-makers decide whether boosts or nudges are the more promising intervention.

Concluding, boosts and nudges are not mutually exclusive and thus not a substitute. Which of the two concepts is the better choice depends on the situation and intention. Regarding educative nudges and short-term boosts, both concepts can complement each other, confirming the relevance of future research.

2.4 Sustainable Food Choices

Sustainable food can be characterised as safe, healthy and nutritious for the consumer, providing a decent livelihood and safe working conditions for people involved in the supply chain, considering environmental aspects in production and processing, reducing energy

consumption and food miles, respecting animals, and supporting the local economy (UK SDC, 2005). There are various examples for SFC, including reduced meat consumption (Graham & Abrahamse, 2017), food that is plant-based, organic (Lacour et al., 2018), insect-based (Megido et al., 2016), seasonal (Macdiarmid, 2014), local (Striebig, Smitts, & Morton, 2019), free from unsustainable ingredients (Hartmann, Hieke, Taper, & Siegrist, 2018), or certified by third parties (Brach, Walsh, & Shaw, 2018).

Decision making towards sustainable consumption is influenced by individual (lifestyle, skilly, needs, etc.), social (media, culture social norms, etc.), and situational factors (information, price, purchase situation, etc.) (Terlau & Hirsch, 2015). When buying low-involvement products such as food, people usually make quick and spontaneous decisions. Kahneman (2012), who discussed a dual-process theory of decision making, assigned these daily life purchases to the thought processing System 1, which describes unconscious, automatic, and effortless decision-making. System 2, in contrast, is slow, analytical, and conscious decision making and required for behavioural changes, e.g., towards more SFC. Analogous to Kahneman's (2012) Systems 1 and 2, Hansen and Jespersen (2013) differentiated two types of nudges. Type 1 nudges aim for automated, unconscious and unreflected changes in behaviour. Type 2 nudges foster reflective and conscious decision-making, increasing people's education and attention. Accordingly, Type 2 nudges seem similar to educative nudges, which, in turn, overlap with short-term boosts (Grüne-Yanoff & Hertwig, 2017), underlining both concepts' suitability for triggering behavioural changes. Yet, "to foster generalisable and lasting behaviours" (p. 155), Hertwig (2017) recommends siding with boosting over nudging.

2.5 Theoretical Framework

Cadario and Chandon (2020) classified healthy eating nudges based on their influence on customers' cognition, affect, and behaviour. Following their research, the paper will serve as a theoretical framework to synthesise information on the potential of nudges and boosts towards SFC. This study builds on nudges and boosts that are cognitively oriented to foster conscious decision-making. The categorisation comprises descriptive labelling, evaluative labelling, and visibility enhancements.

3 Case Study

3.1 Systematic Literature Review

This study applied an SLR to gather information on cognitively-oriented nudges' and boosts' potential towards SFC. The method follows a rigorous paper-selection and review process and is appropriate for structuring literature and critically examining the research field. The advantages of an SLR over a traditional literature review are transparent and reproducible results, as well as a reduced researcher bias (Tranfield, Denyer, & Smart, 2003). Tranfield et al. (2003) proposed a three-step process for implementation, which was applied as follows.

Step 1: Planning the Review

Prior to detailed planning, the paper identified the need for an SLR, as described in Chapters 1 and 2. The research protocol included three planning stages: (1) initial screening of the digital libraries EBSCOhost, Emerald Insights, JSTOR, Science Direct, Springer Link, Web of Science, and Wiley, as well as complementary search in Google Scholar, Mendeley, and Semantic Scholar, taking relevant keywords into account; (2) filtering process that checks the papers for relevance; and (3) papers' evaluation and categorisation. A data extraction form in Excel recorded all information and filter steps. The inclusion criteria contain papers that used the defined keywords in the title, abstract, or keywords section and English language scientific papers published in academic journals. The study excluded papers conducted online or in-lab research, as a mere willingness may not be meaningful to actual consumer behaviour according to the attitude-behaviour gap (Terlau & Hirsch, 2015).

Step 2: Conducting the Review

The SLR was conducted in May and June 2021. The search strategy comprised the keywords 'Nudge,' 'Nudging,' 'Boost,' 'Boosting,' 'Green food,' and 'Sustainable food.' The keywords 'Experiment' and 'Field study' ensured physical customer reactions and no theoretical intentions. In addition to the digital libraries, the study took four literature reviews (Abrahamse, 2020; Hedin, Katzeff, Eriksson, & Pargman, 2019; Lehner, Mont, & Heiskanen, 2016; Vandenbroele et al., 2020) into account.

Overall, the researcher identified 217 papers, including 54 duplicates, due to overlapping results of different search engines. Based on the remaining 163 articles (primary body), the study conducted the first filtering process, checking the titles and abstracts for relevance. Eighty-four papers were not suitable for the analysis, mainly because the word 'boost' or

'boosting' was used as a verb rather than an intervention (n=77). The remaining 79 papers (secondary body) were thoroughly checked and coded manually in a data-extraction form in Excel, including the following information: reference, intervention description, sustainable food type, methodology, country of research, sample size, and results. The second filtering process excluded another 58 papers because, among others, the method or measure was inappropriate (qualitative measure, online survey, or in-lab experiment; n=26), and the papers were off-topic (e.g., focus on health or food waste; n=19). In total, the study identified 21 relevant articles (final body). Figure 1 shows the data collection process.

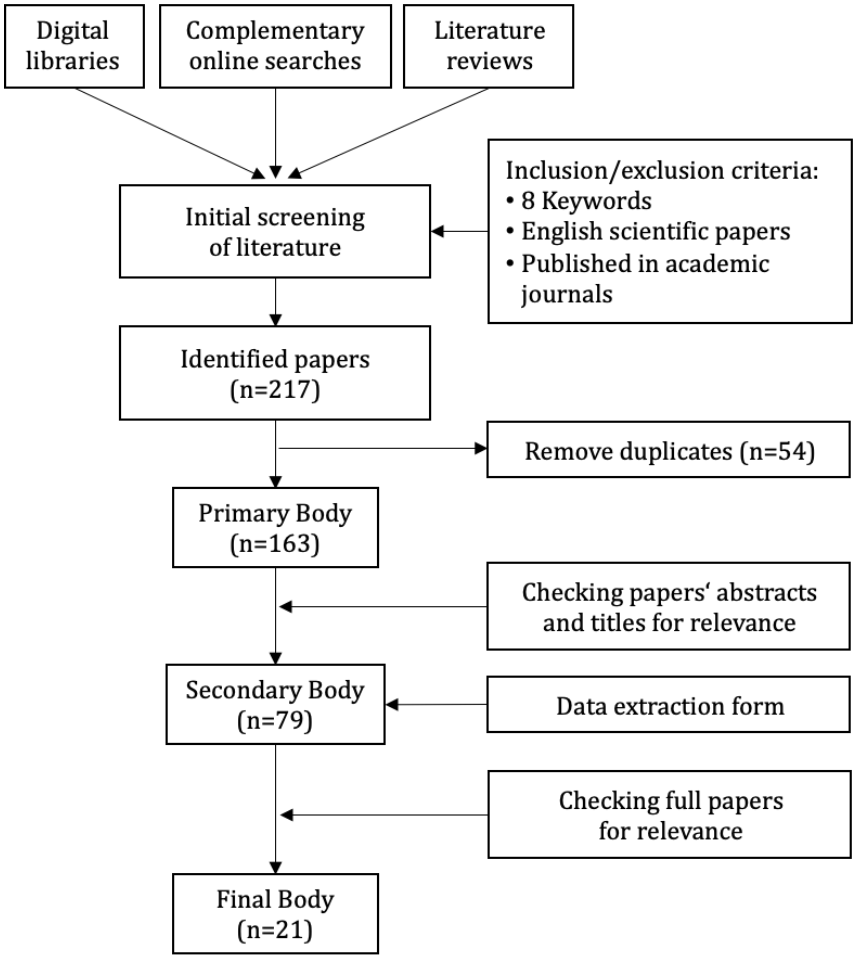

Figure 1: Data collection process of systematic literature review

Step 3: Reporting and Dissemination

Inspired by Tranfield et al. (2003), the study used a two-stage report to evaluate the papers in the final body. First, a descriptive analysis is carried out, including a simple set of categories. The research is based on the data extraction form and summarises the studies' key aspects. The identified interventions were assigned to the three categories 'descriptive

label', 'evaluative label' and 'visibility enhancement' and edited that they provide broadly comparable findings (see Section 3.2 Results). In the second stage, the researcher discusses the findings, identifies promising interventions and derives practical implications (see Section 3.3 Discussion).

3.2 Results

The study identified 21 papers that draw on a range of scientific journal publications published between 2011 and 2021. All articles are field experiments carried out in actual grocery stores, restaurants, and other catering facilities in Europe (n=19), the United States (n=1), and Australia (n=1). The interventions aimed at influencing buying behaviour towards sustainable food alternatives, such as vegetarian or low-carbon food. The research designs comprised control and treatment groups, e.g. by examining different locations or periods.

Based on Cadario and Chandon (2020), the study assigned the interventions to three cognitively oriented categories. Six papers dealt with 'descriptive labelling' (Becchetti, Salustri, & Scaramozzino, 2020; Elofsson et al., 2016; Filimonau et al., 2017; Jäger & Weber, 2020; Ohlhausen & Langen, 2020; Spaargaren et al., 2013), seven papers examined 'evaluative labels' (Brunner et al., 2018; Sigurdsson et al., 2020; Slapø & Karevold, 2019; Spaargaren et al., 2013; Vanclay et al., 2011; Visschers & Siegrist, 2015; Vlaeminck, Jiang, & Vranken, 2014), and eight papers studied the effect of 'visibility enhancements' (Campbell-Arvai et al., 2014; Coucke, Vermeir, Slabbinck, & van Kerckhove, 2019; Garnett et al., 2019; Gravert & Kurz, 2021; Hansen, Schilling, & Malthesen, 2021; Kurz, 2018; Saulais et al., 2019; Vandenbroele, Slabbinck, van Kerckhove, & Vermeir, 2021). Two studies combined visibility enhancements with evaluative labelling (Andersson & Nelander, 2021; Campbell-Arvai et al., 2014). Another two studies are double included, as they examined the effect of two independent interventions (Campbell-Arvai et al., 2014; Spaargaren et al., 2013). Table 2 shows a summary of the interventions.

	Study	Intervention description	Target Food	Country	Setting	Results
Mixed	Andersson and Nelander (2021)	Menu with a vegetarian option at the top and a coloured carbon label	Vegetarian food	Sweden	1 university cafeteria	11% sales decrease of meat dishes; No significant effect observed for vegetarian dishes
	Campbell-Arvai et al. (2014)	Menu with meat-free meal options, and stylised leaf symbol; non-vegetarian dishes on a separate menu on the wall	Vegetarian food	USA	1 campus dining hall	131% sales increase of vegetarian meals
Descriptive Labelling	Becchetti et al. (2020)	Labels on shelves, explaining the importance of green consumption	Organic food	Italy	12 grocery stores	2% sales increase of organic food
	Elofsson et al. (2016)	Labels on shelves, displaying the carbon impact	Local, medium-fat, unflavoured milk	Sweden	17 grocery stores	6-8% sales increase of the labelled milk
	Filimonau et al. (2017)	Menu card, displaying carbon intensity values per portion	Entire menu card	United Kingdom	1 restaurant	7% order decrease of least climate-friendly food
	Jäger and Weber (2020)	Digital screens, explaining the importance of sustainable consumption	Organic and locally produced milk	Germany	2 grocery stores	No significant effect observed
	Ohlhausen and Langen (2020)	Name labels (regional, seasonal, organic, and sustainable)	Entire menu card	Germany	2 university canteens	15-50% increase of choice of labelled food
	Spaargaren et al. (2013)	Black and white CO2-footprint label	Lunch menu card	Netherlands	1 university restaurant	No significant effect observed

	Study	Intervention description	Target Food	Country	Setting	Results
Evaluative Labelling	Brunner et al. (2018)	Menu with traffic-light labels on greenhouse gas emissions	Entire menu card	Sweden	1 university restaurant	11.5% sales increase of green labelled; 4.8% sales decrease of red labelled meat dishes
	Sigurdsson et al. (2020).	'Top seller' and 'Store's choice' shelf tag	Fresh cod fillets and ground beef	Iceland	1 budget store	20-32% sales increase with 'Top seller'; 30-51% sales increase with 'Store's choice'
	Slapø and Karevold (2019)	Menu with eco-labels (traffic-light label, single green and red label) and information posters	Reduced meat consumption	Norway	1 university cafeteria	9% sales decrease of meat dishes with traffic-light label; No significant effect for single red/green label
	Spaargaren et al. (2013)	Three-coloured footprint-label, indicating products' climate score	Lunch menu card	Netherlands	1 university restaurant	3% decrease of CO2 emissions for average lunches
	Vanclay et al. (2011)	Three-coloured footprint carbon label on shelves	Milk, butter, canned tomatoes, bottled water, and pet foods	Australia	1 grocery store	4% sales increase of food with green carbon label; 6% decrease of food with black carbon label
	Visschers and Siegrist (2015).	'Climate-friendly choice'-label and information posters	Four hot meals	Switzerland	1 university canteen	21% sales increase of climate-friendly hot meals
	Vlaeminck et al. (2014)	Environmental friendliness' score label, incl. five attributes rated on a 10-point coloured scale	Apples, tomatoes, beefsteak, chicken, and veggie burger	Belgium	1 grocery store	5.3% increase in the eco-friendliness score of consumers' baskets

	Study	Intervention description	Target Food	Country	Setting	Results
Visibility Enhancements	Campbell-Arvai et al. (2014)	Menu with meat-free meal options, non-vegetarian dishes on a separate menu on the wall	Vegetarian food	USA	1 campus dining hall	124% sales increase of vegetarian meals
	Coucke et al. (2019)	Increased display area size and quantity of displayed products	Sustainable meat (poultry)	Europe	1 grocery store	18% sales increase of poultry
	Garnett et al. (2019)	Menu, containing the double proportion of vegetarian meals offered (from 25 to 50%)	Vegetarian food	United Kingdom	1 college cafeteria	41% sales increase of vegetarian meals
	Gravert and Kurz (2021)	Menu card, offering vegetarian and fish dishes, meat dishes only on request	Vegetarian food	Sweden	1 restaurant	11% sales increase of vegetarian dishes; 24% sales decrease of meat dishes
	Hansen et al. (2021)	Vegetarian buffet, with non-vegetarian option on request	Vegetarian food	Denmark	3 business conferences	76-85 percentage point increase of vegetarian buffet choices
	Kurz (2018)	Menu with a vegetarian option at the top and the dishes placed at more visible spots	Vegetarian food	Sweden	2 university restaurants	45% sales increase of vegetarian lunches
	Saulais et al. (2019)	Vegetarian 'Dish of the Day'	Vegetable Burger	France	1 self-service restaurant	25% sales increase of vegetarian 'Dishes of the Day'
	Vandenbroele et al. (2021)	Pairwise presentation of meat substitutes and meat	Meat substitutes	Belgium	9 grocery stores	171% sales increase of meat substitutes

Table 2: Summary of cognitively oriented interventions towards SFC from the final body

3.3 Discussion

The cognitively-oriented measures ‘descriptive labelling,’ ‘evaluative labelling,’ and ‘visibility enhancement’ are simple, inexpensive and easy to implement in practice. However, they differ in their effectiveness, with visibility enhancements exerting the most significant influence on customers’ purchasing decisions towards SFC, followed by evaluative and descriptive labels. The interventions brought about changes in buying behaviour in almost all of the countries and facilities examined. Yet, the effect sizes differed depending on the state, setting, target food, and the specific measure. According to the sales increase, the most successful interventions include restructured menus, default menus, and pairwise presentations of sustainable and conventional alternatives. Among the evaluative labels, climate-friendly, from customers stemming (e.g. top seller and store's choice), and traffic-light labels are among the most promising. Name labels (e.g. indicating local, organic, or sustainable produce) seem to be the most effective among descriptive labels. A single-coloured CO2 footprint label and explanations of the relevance of SFC had no significant observable effect (Jäger & Weber, 2020; Slapø & Karevold, 2019; Spaargaren et al., 2013). The common problem with descriptive labels is that they do not offer a reference value or meaningful frame that help people to classify the information (Spaargaren et al., 2013). In practice, most people may not be familiar with CO2 emissions from food, making it challenging to identify comparatively high values. Evaluative labels, such as ratings or colour coding, are more suitable as they help customers interpret the information and thus make better, pro-environmental decisions (Vandenbroele et al., 2020). As a result, environmentally interested people can identify sustainable foods more efficiently, increasing the likelihood of purchases (Brunner et al., 2018; Visschers & Siegrist, 2015). In the long term, the labels could change buying behaviours by not only making people aware of what they are buying, but also educating them about the environmental aspects of their purchase and that decision in the process, thereby developing new sustainable preferences.

When designing an evaluative label, it seems crucial that the displayed data is not too complex and overwhelming. Instead, the information should be concise, ideally highlighted in colour (e.g. traffic-light labels), and frequently displayed (e.g. on a variety of products) (Filimonau et al., 2017). Moreover, normative references and frames should not too heavily contradict the general way of thinking (Spaargaren et al., 2013). Yet, labels can also undermine common heuristics (e.g. local food is generally more eco-friendly than global produce), as the study by Vlaeminck et al. (2014) showed.

Despite the effectiveness of evaluative labels, marketers need to be aware that further aspects such as quality, price, and trust in the label influence customers' purchasing decisions (Elofsson et al., 2016; Vanclay et al., 2011). Another point to consider is that it can be very time-consuming for restaurants to calculate carbon values listed on the menu, even if the required data is usually freely accessible (Filimonau et al., 2017).

A possibly simpler alternative is visibility enhancements that comprise the repositioning and availability of eco-friendly food at the point of sale. This so-called ‘primacy effect’ increases the perception of sustainable foods (e.g. vegetarian dishes on top of the menu, expanded assortment of meat substitutes), thereby raising customers’ SFC (Andersson & Nelander, 2021; Vandenbroele et al., 2020; Vandenbroele et al., 2021). The underlying idea is to make conventional food less accessible and present, leading customers to more sustainable options. The intervention’s advantage is that all foods are still available, and none have to be eliminated, preserving people’s freedom of choice. Furthermore, visibility enhancements are fast, easy, and cost-effective to implement (Campbell-Arvai et al., 2014; Garnett et al., 2019; Gravert & Kurz, 2021). Another advantage of this is if restaurants increase the consumption of vegetarian dishes, they can save money as the costs for vegetarian ingredients are usually lower (e.g. around 30%) than for meat. However, the labour costs can slightly increase as preparing vegetarian food is more time-consuming, and chefs might need specific training to create a varied choice of dishes (Garnett et al., 2019; Gravert & Kurz, 2021).

The studies of Campbell-Arvai et al. (2014) and Kurz (2018) have shown that visibility enhancements alone may not be enough to increase sales of sustainable food alternatives. It also depends on the type of food offered. Accordingly, interventions’ effects were higher with appealing (e.g. pasta with vegetables, vegetarian burger, or three-cheese lasagna) than with unappealing dishes (e.g. vegan calzone, stew, or vegetarian sloppy joe sandwich).

Besides the interventions’ positive effects on sustainable food sales, researchers repeatedly warn about the impact of compensation, which means that when customers buy more of one product (e.g. sustainable food), they usually reduce the purchases of another due to budget constraints (Elofsson et al., 2016; Vandenbroele et al., 2020). Slapø and Karevold (2019) even observed a compromise effect: customers prefered the middle rather than the extreme option (e.g. choosing food with a yellow rather than a green traffic-light label). And finally, marketers should not neglect the question of the interventions’ effect sizes on reducing greenhouse gas emissions, as the impact on sales seems more prominent than on emissions (Brunner et al., 2018; Kurz, 2018).

4 Conclusion and Recommendation

This study aimed to identify, classify, and assess the potential of cognitively-oriented nudges and boosts towards SFC. The paper followed the approach by Cadario and Chandon (2020), who named ‘descriptive labelling,’ ‘evaluative labelling’ and ‘visibility enhancements’ as the main categories. With the utilisation of the SLR, the research found visibility enhancements such as menu restructurings and defaults as the most effective interventions to reshape customers’ demands. Evaluative labels are the second most effective way of encouraging customers to consume more sustainably. Traffic-light labels, in particular, help people understand eco-related information such as CO2 emissions and thus make better decisions. By comparison, the effect of descriptive labels seemed small, as they provide no frame or normative reference that help people process the data meaningful.

This paper recommends the application of cognitively-oriented nudges and boosts to marketers of grocery stores, restaurants, or food processing facilities to promote SFC in the long run. The study has shown that customers are ready and willing to switch to sustainable food alternatives, predominantly to vegetarian diets. The author recommends restaurants to rearrange their menus, placing appealing vegetarian food at the top (or first), and grocery stores to set sustainable options in a more convenient position than conventional foods. Those small changes in choice architecture will reduce the emission of food-related greenhouse gases and increase profits for restaurants due to the generally lower costs of vegetarian ingredients. Marketers of grocery stores and food producers should implement concise and colour-graded evaluative labels such as traffic-light labels. By dosing so, they can promote customers’ education with new heuristics, increasing autonomous and sustainable decision making. The measures might also positively affect the company's image in terms of corporate social responsibility.

As this study neglected the interventions’ saving potential of greenhouse gas emissions and the cost-benefit ratio, future studies may focus on these aspects. Also, further research may examine which intervention has the most significant acceptance among customers and fosters long-term behavioural changes best.

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6.3 Desire for Exploration Beats Price: Empirical Study on Customer Motives for Using Digital Monetary Food Sharing Platforms

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Desire for exploration beats price: Empirical study on customer motives for using digital monetary food sharing platforms

Abstract

Fourteen per cent of the global food produced is wasted every, posing an environmental, ecological, and social problem. Digital monetary food sharing platforms have been proposed to reduce food waste by a more efficient use of resources. Yet, literature did not inquire the motivation of consumers to use the platforms. Hence, this paper intends to fill the gap by contributing to the literature on a (food) sharing economy. This study is the first that empirically investigates motives to use monetary food sharing platforms in Germany. We use an exploratory sequential mixed-method approach combining in-depth interviews with a quantitative online survey. Our results suggest that intrinsic motives have a stronger influence than extrinsic motives: the desire to explore new food was more strongly correlated to the behavioural intention to use the platforms than perceived economic benefit and sustainable motives. Concluding, the research deduces theoretical and managerial implications for different stakeholders.

1 Introduction

Fourteen per cent of the food produced worldwide is wasted every year (FAO 2019). Broken down to the European Union, this corresponds to 88 million tons of food waste per year (European Comission 2016). Households and the food industry are responsible for forty per cent of food waste. This extremely high percentage rate is due to products deviating from the optimal shape, size, or colour, being too close to or beyond the ‘best before’ date, or simply leftovers from over-shopping or ordering (FAO 2019; Ganglbauer et al. 2014). These figures are alarming as the problem of food waste affects all three pillars of sustainability (SUST): the excessive consumption of natural resources and the associated CO2 pollution threaten the environment, while lost profits and costs of disposal constitute an economic problem. From a normative perspective, food waste has multiple problems as eatable food is being thrown away while countless poor people are starving having little or nothing to eat (Ciulli et al. 2020).

Therefore, the question arises of how food waste can be effectively reduced. Literature in this field is growing, yet empirical findings primarily focus on household behaviour (Aktas et al. 2018; Morone et al. 2018; Russell et al. 2017). Only a few researchers have addressed hotels, restaurants, or caterings, indicating a need for further research in the foodservice industry (Betz et al. 2015; Martin-Rios et al. 2018).

One frequently discussed instrument to reduce food waste in businesses are digital food sharing platforms (Michelini et al. 2020). This idea follows the principle of a ‘sharing economy’, in which collaborative consumption over the internet represents the primary goal (Belk 2014). Thereby, ‘shar-ing-for-money’ models provide online information concerning nearby locations that offer so-called ‘leftover boxes’ (Michelini et al. 2018). The boxes contain surplus food to be picked up by the con-sumer at a specific time at a reduced price. Hence, monetary food sharing (MFS) provides benefit not only for the consumer but also for the seller, who can generate additional revenues and save disposal costs by reducing waste (Michelini et al. 2018).

Previous studies on food sharing platforms primarily dealt with user descriptions (D’Ambrosi 2018; Harvey et al. 2020; Schanes and Stagl 2019), the effectiveness of waste reduction (Falcone and Imbert 2017; Michelini et al. 2020; Morone et al. 2018) or the underlying business models (Michelini et al. 2018; Zurek 2016); they do not, however, inquire the motivation of consumers to use MFS platforms at all. Hence, this paper intends to fill the gap by contributing to the literature on a (food) sharing economy. It represents one of the first studies that empirically tests the ‘sharing-for-money’ model, thereby providing a

starting point for future research. Furthermore, the study offers insights for marketing strategy development and provides suggestions for improving and developing sus-tainable business models.

As this paper intends to examine consumer's motives, it first provides a review of the current litera-ture. Subsequently, it conducts an exploratory sequential mixed method design combining in-depth interviews with a quantitative survey.

2 Conceptual Framework

2.1 Food Waste Behaviour

Food waste has to be perceived as a result of an interplay of different food-related behaviours (Quested et al. 2013). However, there exists no common definition of the term ‘food waste’, as Stangherlin and Barcellos (2018) found when examining 15 definitions in search of a consensus. In the following, this paper refers to ‘food waste’ as "the wastage of items fit for human consumption – for example, when foods are discarded in the retail trade, in food service, or households because they are regarded as 'suboptimal', when close to the 'best-before' date or due to minor product awns" (Aschemann-Witzel 2016, 409) as this resonates best with the study's authors' understanding. In the literature, various solutions are proposed to combat food waste, including macro-environmental regulations or policies, retailers' engagement, consumer education etc. (Stangherlin and Barcellos 2018).

In academic literature, mainly qualitative study papers have been published dealing with various topics of food waste in households and the food industry (Graham-Rowe et al. 2014; Principato et al. 2015; Radzymińska et al. 2016) as well as more generally with the behaviour of food consumers (Aktas et al. 2018; Russell et al. 2017; Stangherlin and Barcellos 2018). Hermsdorf et al. (2017) are among the few researchers who have published a qualitative study on food waste in the retail sector. Yet, only a small number of household behaviour studies were conducted with quantitative methods (Secondi et al. 2015; Visschers et al. 2016), thereby underlining the need for further research in this field.

2.2 Sharing Economy

Sharing is not a new phenomenon but rather was the primary form of trading in earlier times (Koen and Schor 2019). What is new about the concept of a ‘sharing economy’ (Belk 2014) is creating innovative business models towards SUST. An important stimulating factor is the emergence of the internet, with ‘Web 2.0’ enabling user interaction (Belk 2014) and new opportunities for digital plat-forms (Kaplan and Haenlein 2010). While most people

strove to hold onto and own as much as they could in the past, more recently, the trend of common use and collaborative consumption seems to prevail (Belk 2014). For that purpose, different types of sharing platforms have been developed, for instance, for transport, accommodations, tools, and meal sharing (Böcker and Meelen 2017). Sharing platforms also differ in their orientation towards profit or in the type of user groups they address (peer to peer, business to consumer, or consumer to business (Belk 2014; Schor 2016). Growing awareness towards sustainable consumption is another important aspect that supports the sharing economy concept in general (Bardhi and Eckhardt 2012; Möhlmann 2015) and the food sector in particular (Falcone and Imbert 2017; Heinrichs 2013). Remarkably and contrary to the assumption of a close connection between sharing and intended environmental benefits, Schor (2016) found no such links among existing studies. On the other hand, Hamari et al. (2016) found in their analysis of user's motives to participate in collaborative consumption that SUST, together with enjoyment (ENJ) and economic gains, were the main drivers for usage: this finding represents a good starting point for our research.

2.3 Food Sharing

Traditionally, food sharing was based on the exchange within the circle of acquaintances and ex-tended families (Kaplan and Haenlein 2010). Moreover, the term ‘food sharing’ is often associated with generous offers for people in need, neighbourhood help, and social projects (Davies and Evans 2019). This perception is about to change nowadays, underlining the additional economic and envi-ronmental benefits: “Food sharing can lead, in theory, to more efficient use of resources reducing at the same time the amount of waste production” (Falcone and Imbert 2017, 210).

Consequently, the number of academic papers dealing with related topics has increased in recent years. For example, Zurek (2016) assessed the risks and regulations of food sharing on the consumer side; D’Ambrosi (2018) investigated consumers’ attitudes towards food sharing practices in Italy and found that sharing platforms still play a limited role there. Falcone and Imbert (2017) pointed out that food sharing does not per se fight food waste on the consumer side: a finding which was confirmed by Morone et al. (2018). Ciulli et al. (2020) analysed the intermediary position of digital platforms in the food supply chain bringing together supply and demand. Michelini et al. (2018) observed the positive impact of new technologies and assigned three business models for food shar-ing platforms: sharing for charity, sharing for community, and sharing for money. In a similar vein, Michelini

et al. (2020) evaluated various business models of food sharing platforms and underlined the potential of digital platforms to connect relevant stakeholders for reducing food waste.

In this context, the ‘sharing for money’ model is receiving growing attention. The concept describes a profit-generating business to consumer model that operates through digital platforms and com-monly smartphone apps. Technology is serving as an intermediary for the transaction, in which shar-ing represents a monetary exchange. The food’s producer or distributor represents the supply side; the demand side is the customer who can obtain online information about nearby locations offering leftover food that can be picked up at a certain time. Thereby, customers generally do not know what the so-called ‘leftover boxes’ contain. This sharing model encompasses several advantages, such as cutting disposal costs and increasing profits by selling the food. Moreover, the model seems to positively affect society as it sensitises people to the amount of food waste and the need to re-duce it (Michelini et al. 2018). In the course of this study, the presented food-sharing model will be referred to as ‘MFS’.

Since the MFS business model is still in its infancy, very few studies deal with the concept. One of these stems from Michelini et al. (2020), who identified four distinct aspects of food sharing on digital platforms: a link between suppliers and customers, communication medium for stakeholders, contribution towards food-related SUST goals, and an offer of products free of charge or for a re-duced price. In a similar vein, Schanes and Stagl (2019) identified five key motivations for partici-pating in food sharing: emotions and morality, identity and sense of community, reward, social in-fluence, and instrumentality. Subsuming these results with findings from studies on other digital sharing platforms, three main usage motives emerge:

Economic benefit (EB): The saving of money is a central motivating factor in food sharing (Belk 2010). Hamari et al. (2016) identified it as one of the main drivers for collaborative consumption. Michelini et al. (2018) even observed that discounted prices are the perceived main benefit for con-sumers when using food sharing models.

SUST orientation: The motivation is based on the assumption that participating in a sharing econo-my model is perceived as a sustainable way of consumption (Bardhi and Eckhardt 2012; Möhlmann 2015). In that sense, Hamari et al. (2016) highlighted that a high level of ecological SUST is ex-pected from participating in the sharing economy. The authors thereby assumed that sustainable be-haviour is altruistically motivated and is related to ideologies and norms. Accordingly, SUST asso-ciation is supposed to be the main driver for the usage of (food) sharing platforms (Hamari et al. 2016; Michelini et al. 2020).

Community orientation: Böcker and Meelen (2017) identified social aspects - such as the interaction between stakeholders - as significant factors for participating in food sharing. Bucher et al. (2016) proved the positive relationship between social motives and the sharing attitude and intention. A correlation analysis between motives and usage behaviour by Hawlitschek et al. (2016) showed that sharing enables social experience and is appreciated by users' social environment.

As it is apparent from the literature presented, only little is known about the influential role of con-sumer motives when participating in food sharing. Hence, this study attempts to fill that gap with a particular focus on digital MFS platforms.

2.4 Theoretical Background

To improve food waste reduction via digital platforms, a sound understanding of consumer motives is a prerequisite. A well-known framework on consumer behaviour is the theory of planned behav-iour (TPB) from Ajzen (1991). The target determinant of this model is behavioural intention which is determined by attitude, subjective norms, and perceived behavioural control (Ajzen 1991). The literature has shown that TPB can be applied to behaviour regarding 'sharing economy' and 'food waste' (Aktas et al. 2018; Falcone and Imbert 2017; Roos and Hahn 2019; Russell et al. 2017). As this study aims at explaining behavioural intention towards digital MFS platforms, TPB was applied to develop a semi-structured interview guideline for identifying the usage motives in the qualitative research.

Another vital framework for explaining behaviour is the self-determination theory (SDT) by Deci and Ryan (1985a), focusing on human motivation and personality. The theory distinguishes between extrinsic and intrinsic sources of motivation and the associated degree of self-determination of be-haviour. Cognitive evaluation theory (CET) is a sub theory of SDT, comprising differences within and factors that enhance and diminish intrinsic motivation (Deci and Ryan 1985a). Dealing with customer motives, SDT and CET were applied to categorise the qualitative interviews' identified motives and derive further implications from them.

3 Materials and Methods

3.1 Mixed-Method Design

Since little is known about the motives that influence consumers towards MFS usage on digital plat-forms, this study conducts an exploratory sequential mixed-method study. Mixed-method designs can be applied in different ways but always consist of a qualitative

and quantitative part (Creswell and Plano Clark 2011). The study used a ‘developmental’ approach, also referred to as ‘exploratory sequential’, which is applied to develop constructs and hypotheses through ‘exploratory’ qualitative research, followed by moving ‘sequentially’ to the quantitative survey to check validity (Creswell and Plano Clark 2011). The two approaches were combined within the same research project, com-plementing each other. The objective of the in-depth interviews was to gather insight into usage mo-tives from regular users, which were then utilized to formulate the hypotheses and develop a stand-ardised quantitative questionnaire. The quantitative online survey’s goal was to verify the results among users and non-users to obtain representativeness of the relationship between the identified usage motives and behavioural intention (BI), as suggested by TPB.

3.2 Qualitative Study

Semi-structured in-depth expert interviews were conducted to identify the motives of actual MFS users. According to the qualitative research criteria (Tong et al. 2007), experts were interviewed un-til no new findings arose. Consequently, four frequent users (two male and two female) of the MFS app ‘TooGoodToGo’ were questioned. The interviews were carried out in May 2020 in Germany, limited to telephone interviews due to the Covid-19 pandemic. Each interview took approximately 20 minutes and was recorded audio-visually and transcribed. Based on TPB, the interview guideline included questions on the perceived behavioural control (situation and frequency of app usage), atti-tude (perceived advantages and disadvantages of the app), subjective norm (other people’s percep-tion), BI (personal motivation to use the app), and outlook (need and suggestions for improvement of the app). The questionnaire items were adopted from previous literature (Ajzen 1991; Deci and Ryan 1985a; Deci and Ryan 1985b). The transcribed interviews were analysed based on the Grounded theory by Corbin and Strauss (1990), using an open and inductive coding approach. Open and inductive coding describes a procedure where the observed data is assigned to categories that are developed in the course of the analysis. Accordingly, all relevant interview passages were highlighted and subsequently paraphrased. Based on paraphrasing, 18 keywords were identified, which were consolidated into seven constructs, resulting in seven hypotheses that are presented in Section 4.1 ‘In-depth interviews’.

3.3 Quantitative Study

Based on the findings from the in-depth interviews, a standardised questionnaire was developed – the survey aimed at quantifying the qualitative research results. Participation

in the study was not restricted, as both users and non-users of MFS platforms were addressed. Data were collected with an anonymous online survey in June 2020, distributed on social networks and online fan communi-ties of a well-known food-sharing app. In total, 181 Germans completed the questionnaire. The ma-jority of participants were female (73.9%) and under 35 years (75.7%). Half of the respondents (50.8%) were graduates, had a monthly net income of up to 1,500€ (48.6%), and lived in a city (54.4%). Likewise, 43.3% of the participants referred to themselves as users of digital MFS plat-forms (see Table I for sample's demographics). The sample was widely representative as it is sug-gested that 65.4% of women were in charge of food purchases in Germany, legitimating the skewed gender distribution (Max Rubner-Institut 2008).

		Count	**%**
Proband	User	78	43.2%
	Non-User	103	56.8%
Gender	Female	134	73,9%
	Male	47	26,1%
Age	18 – 24 years	65	35.9%
	25 – 34 years	72	39.8%
	35 – 44 years	9	5.0%
	45 – 54 years	11	6.1%
	55 – 64 years	23	12.7%
	>65 years	1	0.5%
Education	Middle school	20	11.0%
	High school	60	33.1%
	Graduate	92	50.8%
	Others	9	5.1%
Job	Pupil	5	2.8%
	Trainee	5	2.8%
	Student	77	42.2%
	Employee	74	41.1%
	Self-employed	11	6.1%
	Others	9	5.0%
Monthly net income	<499€	25	13,8%
	500-1,500€	63	34,8%
	1501-3,000€	47	26,0%
	3001-4,500€	14	7,7%
	4501-6,000€	10	5,5%
	>6,000	7	3,9%
	Others	15	8,3%

Home	City	99	54,5%
	Small town	51	28,3%
	Country side	31	17,2%

Table I: Sample's demographic information

The online survey started with the description of a fictional food-sharing app. After that, four ques-tions on the usage of food sharing platforms and food waste behaviour followed. The questions in the central part related to a fictitious MFS app and referred to the seven constructs identified in the in-depth interviews and BI. Each construct was measured with three to five items on a 7-point Lik-ert scale. All items were modified from previous studies (Aldás-Manzano et al. 2009; Bucher et al. 2016; Hamari et al. 2016; Hawlitschek et al. 2016; Pliner and Hobden 1992; Steptoe et al. 1995; van der Heijden 2004). The survey ended with questions on the respondent's demographics. Six people completed the questionnaire as a pre-test.

The study used IBM SPSS Statistics 25 to evaluate the quantitative research. An explorative factor analysis was run to identify patterns within respondents' answers to usage motives (Child 2006). To ensure sampling adequacy, the study ran the Kaiser-Meyer-Olkin test (value of 0.825), the Bartlett test of sphericity (was significant), and the measure of sampling adequacy (values all > 0.5). To in-terpret the factors, the principal component analysis was conducted using the varimax rotation crite-rion. Based on similar statements, 45 items were consolidated into eight factors, representing the various usage motives. In the following analyses, the identified motives served as independent vari-ables while BI was regarded as the dependent variable. Based on the extracted factors, a Pearson's correlation analysis was performed to measure linear correlation. Subsequently, a linear regression analysis was carried out to determine the degree of correlation between the variables and to test the study's hypotheses. The study met all requirements of the Gauss-Markov theorem: metric scale lev-el, variance and causality of the variables, no multicollinearity (variance inflation factor ranged be-tween 1.025 and 1.700), no autocorrelation (Durbin-Watson statistics [1.28 - 1.55]), normal distribu-tion of residuals, homoscedasticity, and linearity.

4 Results

4.1 In-depth Interviews

The interview participants mentioned various aspects of using digital MFS platforms. The qualitative content analysis identified seven constructs influencing the experts: EB, convenience (CV), SUST, desire for exploration (DEXP), ENJ, social risk (SR), and food neophobia (FN). In the following, the constructs were described in more detail, and hypotheses for the quantitative survey were for-mulated. Based on SDT and CET, the usage motives were assigned to extrinsic or intrinsic motiva-tion towards consumer behaviour to derive further implications.

EB: The interviews showed that EB of food sharing matters, as all interviewees mentioned that they could save money when buying the price reduced food leftovers. The participants noted that “it is an advantage that I can get good food for less money” (P2), that ”it is good that [the food] is much cheaper than usual”’ (P3) or “that one can save money because it is just a lot cheaper” (P4). How-ever, saving money seems not the most crucial motive as none of the experts mentioned it first. P1 even said that “it's nice that [the food] is discounted, but it doesn't have to be”. EB can be attributed to extrinsically motivated actions as they are driven by external rewards arising from outside (Deci & Ryan, 1980). Thus, the study hypothesises as follows:

H1: Perceived EB of MFS positively influences the behavioural intention to use digital MFS platforms.

CV: According to all expert interviews, comfort and CV were reasons for using the app, as the fol-lowing interview excerpt illustrates: “I don't have to worry about what I eat anymore. I just take a look at the app and choose something” (P4), “either I don't feel like cooking myself or I don't have time to cook myself” (P1) and “another advantage is that you don't have to cook and prepare your-self” (P3). Accordingly, the construct of CV is defined as not having to cook for oneself and worry about food preparation. The construct is conceptualized as intrinsic motivation because of the high degree of self-determination of the behaviour (Deci and Ryan 1980). Consequently, the second hy-pothesis reads as follows:

H2: Perceived CV of MFS positively influences the behavioural intention to use digital MFS platforms.

SUST: All experts mentioned SUST as a motivating factor and took up the food waste problem: “I save food from being thrown away” (P1), “It is so shocking [how much food] is thrown away, and if you are not consciously aware of it, then there is such a rut” (P2), “I think it's good that companies don't have to throw away food and I like to support that” (P3) and “you know [the food] will be thrown away otherwise” (P4). As a further consequence, two experts even said that they felt good because they contributed to environmental protection: “It goes without saying that the feeling when you buy something plays a role in having done something good” (P1) and “You feel good about it” (P4). However, the importance differed between the respondents. P3, for example, named SUST as a significant influencing factor: “I'm critical of the throwaway society, and that's why I like the sys-tem, and the SUST aspect has influenced me”. P1, on the other hand, rated the construct less rele-vant: “The SUST aspect is not a priority for me”. P2 was even critical of the SUST aspect, noting that “there is always so much packaging waste”, contradicting the SUST concept of food sharing. The study identified SUST as an intrinsic motivation to act sustainably. Yet, the study hypothesises the following:

H3: Perceived SUST of MFS positively influences the behavioural intention to use digi-tal MFS platforms.

DEXP: All experts mentioned that food sharing appeals to them as a positive incentive to experi-ence something new, as the following interview excerpts show: “Through the app, I have found new restaurants and, so to speak, run a restaurant test” (P2) and “I want to try something new. I'm the experience person who thinks [those food-sharing platforms are] good” (P1). Besides, DEXP repre-sents a valued surprise experience for the users, as it is unknown what the leftover boxes will con-tain. Expert P3 substantiated: “Surprise packs are good because you can try out several things” and P4 stated that “in all facilities, I found these sample packs quite good because they often contained great things. At one of them, I even repurchased something afterwards, not through [the app].” DEXP is perceived as intrinsically rewarding by the prospect of exciting and new experiences. Therefore, the study develops the hypothesis that:

H4: Perceived DEXP positively influences the behavioural intention to use digital MFS platforms.

ENJ: The interviews revealed that the experts describe the app as “something positive and cool” (P2), pointing out that “the way the app is working is really enjoyable” (P4). P2

further explained that “when I use the app, it feels excellent. Like a win-win situation” and also P3 said that “I think the app is pretty good”. Ryan and Deci (Deci and Ryan 1985b) mentioned that ENJ is a crucial in-trinsic motivation that is caused by the activity itself and thus people’s desire to use those digital platforms. Consequently, the fifth hypothesis reads as follows:

H5: Perceived ENJ of MFS positively influences the behavioural intention to use digital MFS platforms.

SR: SR is defined as “the possibility of attracting unfavourable attention and response from pur-chasing a particular product” (Aldás-Manzano et al. 2009, 56). Three out of four experts stated that they feel uncomfortable when picking up the foods: “like a rummage sale at the supermarket...that’s how I sometimes fee”’ (P3). P2 even felt “being a burden to the seller’ by using the app as ‘the sellers reacted strangely when picking up the food”. P2 attributed this to the fact that usually no tips are given and that the shops have extra work to pack up the boxes. Also, P4 confirms that “one feels a bit strange in the shop”. SR is determined as extrinsic motivation. Consequently, the construct of SR initiates the following hypothesis:

H6: Perceived SR of MFS negatively influences the behavioural intention to use digital MFS platforms.

FN: The term FN refers to an aversion to eating and/or avoiding novel foods (Pliner and Hobden 1992). The study determined ‘novel foods’ as unfamiliar foods that were not selected by oneself. Accordingly, this construct can have a negative influence and an inhibiting effect on consumer be-haviour. Yet, it seems to be a relatively rare phenomenon when using digital monetary food-sharing platforms. Only expert P3 argued “that people think [the food is] not so fresh anymore” and “I'm afraid [the food] won't taste good and I'm not satisfied”. He also mentioned that he had food in the boxes that were probably not that popular and therefore not so tasty, explaining his concerns. The construct of FN is conceptualized as intrinsic motivation. The last hypothesis reads as follows:

H7: FN towards MFS negatively influences the behavioural intention to use digital MFS platforms.

4.2 Online Survey

An explorative factor analysis with 45 items was carried out to examine the independence of the identified motives. Although the analysis indicated twelve factors with eigenvalues greater than 1.0, a ten-factor solution was preferred due to the scree plot and theoretical considerations, which ex-plained 70.7% of the variance. Also, the varimax rotation demonstrated that the items load on ten factors (Table II). Six out of eight factors (EB, SUST, DEXP, ENJ, SR and BI) fulfilled the reliabil-ity requirements with a Cronbach's alpha of at least 0.7. For the factors CV and FN, Cronbach´s alpha was slightly smaller than 0.7, however, showing reliability in terms of content (Table III). In conclusion, eight factors were considered in Pearson's correlation and linear regression analysis: EB, CV, SUST, DEXP, ENJ, SR, FN, and BI.

Item	Statement	Loading
EB1	I can save money if I use the app.	0.791
EB2	My participation in the app benefits me financially.	0.812
EB3	My participation in the app can improve my economic situation.	0.800
EB4	My participation in the app saves me time.	0.417
CV1	It is important for me that the food I get via the app is easy to receive.	0.372
CV2	It is important for me that I do not have to cook because of the app.	0.792
CV3	It is important for me that the food I get via the app takes me no time to prepare.	0.816
CV4	It is important for me that the food I get via the app can be bought close to where I live or work.	0.541
CV5	It is important for me that the availability of the food I get via the app is high.	0.589
SUST1	The usage of the app helps to save natural resources.	0.811
SUST2	Using the app is a sustainable model of consumption.	0.783
SUST3	Using the app is ecological.	0.877
SUST4	The app is efficient in terms of using resources.	0.793
SUST5	Using the app is environmentally friendly.	0.762
ENJ1	I think using the app is enjoyable.	0.732
ENJ2	I think using the app is exciting.	0.811
ENJ3	I think using the app is fun.	0.793
ENJ4	I think using the app is interesting.	0.648
ENJ5	I think using the app is pleasant.	0.430
DEXP1	The app is a good opportunity for me to try out new restaurants/cafes/bakeries.	0.723
DEXP2	The app is a good opportunity for me to try out new food.	0.735
DEXP3	I consider it positive that I cannot decide in advance which food I will get.	0.618
DEXP4	Because of the app, I will try new restaurants/cafes/bakeries.	0.388

DEXP5	I like to be surprised.	0.409
SR1	I think using the app degrades the image that other people have of me.	0.855
SR2	Some people think I am not acting correctly when I use the app.	0.899
SR3	People think that I am misbehaving if I use the app instead of buying regular takeaway food.	0.881
FN1	I like food from different cultures.	0.669
FN2	I´m afraid to eat things that I have never had before.	0.817
FN3	I am constantly sampling new and different food.	0.738
FN4	If I don´t know what food I will get, I won´t try it.	0.606
ATT1	All things considered, I perceive using the app to be a wise move	0.790
ATT2	All things considered, I perceive using the app is a positive thing	0.856
ATT3	All things considered, I perceive using the app is a good thing	0.836
ATT4	Overall the app makes sense	0.755
BI1	I expect to continue using the app often in the future.	0.796
BI2	I can see myself engaging in the app more frequently in the future.	0.775
BI3	I can see myself increasing my app activities if possible.	0.749
BI4	Likely, I will frequently use such an app in the future.	0.786

Table II: Factor loadings for usage motives of digital MFS platforms

The study checked possible correlations by using the Pearson correlation coefficient (see Table III). The dependent variable BI had a significantly positive correlation with EB, SUST, ENJ and DEXP. Linear regression analysis was carried out to determine the degree of correlation and to test the hy-potheses. The correlation coefficient R determined the strength of the linear correlations. Accord-ingly, among the extrinsic motives, the study found that EB had a significant positive effect ($\beta = 0.346$, $p < .001$) and SR had no significant negative effect ($\beta = -0.084$, $p = 0.261$) on the BI to use the digital platforms. For intrinsic motivations, the effects on BI were found as follows: CV no sig-nificant positive effect ($\beta = 0.110$, $p = 0.139$), SUST significant positive effect ($\beta = 0.279$, $p < .001$), ENJ significant positive effect ($\beta = 0.574$, $p < .001$), DEXP significant positive effect ($\beta = 0.616$, $p < .001$), FN no significant negative effect ($\beta = -0.128$, $p = 0.085$). Consequently, while EB ($R2 = .120$, $F(179) = 24.36$, $p < .001$), SUST ($R2 = .078$, $F(179) = 15.07$, $p < .001$), ENJ ($R2 = .330$, $F(1, 179) = 88.15$, $p < .001$) and DEXP ($R2 = .380$, $F(179) = 109.66$, $p < .001$) explained a significant part of the variance in scores on BI, SR ($R2 = .007$, $F(179) = 1.26$, $p = .261$), CV ($R2 = .012$, $F(179) = 2.21$, $p = .139$) and FN ($R2 = .020$, $F(179) = 2.99$, $p = .085$) did not. Thus, hypotheses H1, H3, H4, and H5 were accepted while H2, H6, and H7 were rejected. When comparing the results of the re-gression analyses of the two subsets ‘users’ and ‘non-

users' with the entire sample, no significant differences were observed, indicating no differences in usage motives.

	Mean	SD	EB	CV	SUST	ENJ	DEXP	SR	FN	BI
EB	4,96	1,11	(0,793)							
CV	5,02	0,99	,295**	(0,694)						
SUST	5,85	0,91	,434**	,246**	(0,908)					
ENJ	4,91	1,16	,392**	,283**	,446**	(0,862)				
DEXP	5,36	1,06	,371**	,210**	,278**	,520**	(0,802)			
SR	2,02	1,24	0,031	-0,021	-0,040	-0,017	-0,084	(0,86)		
FN	4,21	0,56	-0,140	0,051	-0,104	-0,063	-,195**	0,060	(0,692)	
BI	5,22	1,4	,346**	0,110	,279*	,574*	,616*	-0,084	-0,128	(0,939)

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
Table II: Pearson correlations and Cronbach´s alpha

5 Discussion

5.1 Motives for the Usage of Digital MFS Platforms

The qualitative research identified seven usage motives (EB, CV, SUST, DEXP, ENJ, SR, and FN) of digital MFS platforms; EB, SUST, DEXP, and ENJ were found to have a significant influence on BI in the quantitative research. In the following, the four significant motives are examined in more detail.

Based on the conceptual integration of TPB, SDT and CET and the empirical findings, the study assumes that intrinsic motivation, including the constructs of SUST, DEXP and ENJ, has a signifi-cantly strong influence on BI to use digital MFS platforms, whereas extrinsic motivation, such as EB, had only a significantly medium influence. Consistent with SDT's key assumption that the fac-tors influencing individuals' choices are primarily based on intrinsic motivation, the study expects the consumers to act mostly intrinsically motivated to satisfy their personal desire to explore and enjoy rather than a predominantly sustainable and monetary motivation. According to the TPB, all significantly positive motives (see H1, H3, H4 and H5) can be assigned to the determinant 'atti-tude'. The inhibiting motives (see H6 and H7) generated from the determinant 'social norms' had no significant influence on BI. Since previous research demonstrated that TPB could be applied to pre-dict customers intention to engage in the sharing economy (Falcone and Imbert 2017; Roos and Hahn 2019), the correlated BI is expected to result in the actual behaviour of using digital MFS platforms. Correspondingly, the study suggests that the motives DEXP, SUST, ENJ and EB are the main drivers to participate in the sharing offer.

DEXP seems to have the most significant positive influence on BI. This finding is in line with a study from Baumgartner and Steenkamp (1996), who dealt with the curiosity in customer behaviour to try something new. The authors found that the ‘exploratory acquisition of products’ is strongly associated with sensory stimulation, e.g., risk-taking and inherent interest in innovations, thereby relating to active variety seeking. Reisenzein (2000) further explained that the degree of unexpect-edness is decisive for the intensity of the perceived surprise and influences the positive surprise ex-perience. It can be concluded that the curiosity to experience uncertainty in the leftover boxes, thereby discovering new (food) locations and having a surprise experience, is a strong motive for the usage of MFS. This could be related to ‘experience-oriented behaviour’, leading to a positive mood and higher shopping satisfaction through greater enjoyment (Wolfinbarger and Gilly 2001).

The study further indicates that SUST positively influences BI but with a smaller correlation than initially assumed. This result was unexpected, as the SUST aspect is the promoted key concept of existing MFS platforms, aiming at ‘saving food’ and promoting sustainable development regarding food waste. According to Graham-Rowe et al. (2014), the motive to do the ‘right thing’ was the second most important influencing factor after economic motivation. Hamari et al. (2016) even found perceived SUST as the most crucial factor influencing attitude towards collaborative con-sumption. Three underlying reasons might hinder people from consuming sustainably, leading to contradictory results: economic rationalizations, institutional dependencies, and developmental real-ism (Eckhardt et al. 2010). In this context, Michelini et al. (2020) changed the perspective as that they examined whether SUST can serve not only as a motivator but also as an output. Accordingly, the authors claimed that using food-sharing platforms could trigger sustainable solutions to tackle food waste reduction and efficient use of resources. In summary, consumers take the SUST aspect into account, which influences their attitude towards digital MFS platforms. Yet, it only slightly affects people’s actions towards the usage of the respective platforms.

Moreover, the results suggest that the intrinsic motivation of ENJ plays an essential role in influenc-ing BI by affecting the individual’s attitude. Some people might use the MFS platforms because they simply enjoy it. This finding is consistent with the study of Hamari et al. (2016). They observed that participation in collaborative consumption is motivated by ENJ from the activity, which in turn influences the attitude and intention to use respective platforms. Similar studies on digital platforms that provide shared accommodation (Sung et al. 2018) and shared transport (Lee et al. 2018) also reported that ENJ positively affected consumers’ attitude to participate in the sharing economy.

Consistent with the study's assumption, the extrinsic motivation of EB positively influenced BI, but in a rather moderate context. This finding concurs with studies that determined the incentive to save money as one of the participants' main objectives (Falcone and Imbert 2017; Michelini et al. 2018). Interestingly, so far, only studies on food sharing in the non-profit sector concluded similar results, such as Ganglbauer et al. (2014), who analysed that only a minority of users participate in food shar-ing because of an economic need. The authors trace this back to feelings of shame that might hinder people from using the platforms.

5.2 Theoretical Implications

From a theoretical perspective, this study provides empirical evidence on German customers' mo-tives for using digital MFS platforms, thereby contributing to the literature on sharing economy, focusing on the 'sharing-for-money' model of food sharing (Michelini et al. 2018). Another theoret-ical contribution is that the paper suggests a more significant influence of the desire to explore new food than previous literature which assigned the greatest importance to the perceived EB (Belk 2010; Michelini et al. 2018), providing a starting point for future research. Lastly, and to the best of our knowledge, this is one of the first studies that empirically tests customers' usage motives for digital MFS platforms, as previous papers primarily focused on user descriptions (D'Ambrosi 2018; Harvey et al. 2020; Schanes and Stagl 2019) and the effectiveness of waste reduction (Falcone and Imbert 2017; Michelini et al. 2020; Morone et al. 2018).

5.3 Managerial Implications

This research proposes several implications for different stakeholders to reduce food waste in the foodservice industry by promoting digital MFS platforms (Betz et al. 2015; Martin-Rios et al. 2018).

First, government authorities are suggested to encourage new and innovative business models, such as MFS, by launching subsidy programs that invest in food rescue organisations. Governments should also create new regulatory frameworks that make overproduction, and disproportionate amounts of food waste more transparent - as food sharing initiatives may save food from being thrown away but do not solve the fundamental problem of food oversupply in society (Ciaghi and Villafiorita 2016). Corresponding measures could incentivize organizations to donate surplus and good quality food

approaching the ‘best-before’ date. Finally, politics could use information cam-paigns to draw attention to the problem of and possible solutions to food waste.

Second, food sharing platform operators should offer exploratory experiences to increase platform usage. Therefore, the ‘surprise factor’ of not knowing what food to receive and the possibility to try out new things should be highlighted to the consumers. Operators may promote the experience of getting to know new food locations and unexpected dishes. The study also implicates that operators do not need to overemphasize the SUST aspect in marketing. However, since the mission of the business model is SUST (Falcone and Imbert 2017; Heinrichs 2013), operators should encourage business partners to address SUST in every canvas, e.g., by local supply chains, reusable and recy-clable packaging, or eco-friendly and healthy dishes. To increase the usage of MFS platforms and reduce food waste, operators may implement lock-in effects to create long-term customer relation-ships and expand the concept to smaller towns, as most services are only available in urban areas.

Finally, MFS seems very interesting from an economic point of view. Contrary to the opinion of Michelini et al. (2018), we do not see MFS limiting but rather complementing food sharing models that promote social welfare. Unlike food donations, MFS is much more attractive to the supply side. It generates additional income, presumably leading to a significantly higher acceptance and range of coverage among the foodservice industry. Since MFS users pay for the food, it is further assumed that customers expect higher quality and professionalism, e.g., unique experience or service. In addi-tion, MFS providers could simultaneously run food donation projects, in which food is donated that could not be sold through the monetary business model. Either way, food sharing increases public awareness of food wastage and promotes its reduction (Michelini et al. 2018), thereby helping or-ganisations pursue their corporate SUST goals.

6 Conclusion

This study presents one of the first findings in the under-researched field of MFS by empirically examining the ‘sharing-for-money’ model with a mixed-method approach. Four in-depth interviews and an online survey analysed the motives that influence customers towards using digital MFS plat-forms. The findings revealed that DEXP had the most significant influence on BI, followed by ENJ, EB, and SUST. Accordingly, intrinsic motivation seems to have a stronger influence on BI than extrinsic motivation. To promote MFS and reduce food waste in the long run, this paper pro-vides valuable insights into consumers’

usage motives, offering a basis for governmental support, marketing strategy development, and suggestions for improvement and growth.

However, this study is not without limitations. The mixed-method research needed a high volume of time and capacity. Accordingly, the sample is relatively small, comprising four expert interviews and 181 completed quantitative questionnaire. Even though the number of expert interviews seemed sufficient, as no new findings arose (Tong et al. 2007), future research should take more time to col-lect the data and increase the sample of both studies. Despite the argument that more women are responsible for grocery shopping, a gender-balanced distribution of the sample would be desirable. The selected sample consisted of users and non-users in Germany. Consequently, it would improve the representativeness if only actual users were surveyed. Other countries could also be considered, enabling a cross-country comparison. Although this study has taken a significant first step in exam-ining the influencing motives for using digital MFS platforms, more detailed research is required in the future. A structural equation model should be developed to gain deeper insights, which allows the estimation and testing of correlations and hidden structures.

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6.4 How Personal and Social-focused Values Shape the Purchase Intention for Organic Food: Cross-country Comparison between Thailand and Germany

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How personal and social-focused values shape the purchase intention for organic food: Cross-country comparison between Thailand and Germany

Abstract

Organic food contributes to environmental sustainability and is becoming increasingly popular worldwide, although it is generally more expensive than conventionally produced food. Rather different sets of values and motivations are driving consumers' purchase intentions in mature compared with emerging organic food markets. To inquire about similarities and differences in consumers' motives our qualitative, comparative study employs a series of in-depth interviews with organic-food-store clients in Germany and Thailand from February to May 2021. The analysis applied means-end chain (MEC) theory to map the mental decision-making processes. Results were interpreted and compared referring to the Schwartz Theory of Basic Human Value (STV). The findings show a rather similar values base of both samples in terms of the relevance of ‘quality of personal life’ and ‘personal well-being’. Substantial differences emerged in the Germans high emphasis on the values ‘health of environment’ and ‘social responsibility’ which were absent in Thailand, while Thais put great importance on the ‘responsibility for family’. Focusing on the five most important values in each country, we conclude a more personal-focused value system in Thailand, respectively a rather social-focused one in Germany. This paper contributes to the literature as it is one of the few qualitative studies on organic food purchase intention using MEC and STV and the first one conducted in Thailand. The findings provide valuable insights for producers and marketers to better address German and Thai consumers' needs to influence their purchase intention towards organic food consumption.

Keywords: Means-end chain, Laddering, Schwartz theory of basic human value, Organic food, Purchase intentions, Cross-cultural comparison

1 Introduction

Organic agriculture follows a strategy of preventive environmental management, contributing to environmental sustainability by reducing soil and water pollution, promoting biodiversity, and using less energy (FAO, 2021). The objective is to produce and process food using only natural ingredients and methods to reduce the environmental impact by meeting international and self-imposed standards (European Commission, 2023). Organic food is thus not only important for environmental and personal health but is also becoming increasingly popular in society. From an environmental, social, and economic perspective, the continued positive development of organic agriculture and food sales is thus desirable (Aghasafari *et al.*, 2020).

For example, Germany is the world's second-largest market for organics, generating annual sales of 16 billion euros (ca. $17,2 billion) in 2021, which represents more than 10% of global sales for organic food (BÖLW, 2022). While the organic market in Germany has reached a maturity stage (Iweala *et al.*, 2019), the representation of organic foods in the densely populated Asian markets is still rather limited (Pham *et al.*, 2019). In Thailand, the organic food industry is a niche market with a 3 billion Baht (ca. $90 million) market value, representing as little as 0.002% of the total Thai consumer spending in 2020 (Theparat, 2020; Statista, 2021).

Understanding factors that shape the purchase intention for organic food products is thus decisive and helps marketers and researchers to better address people's needs and shape sustainable food consumption in the future (Thøgersen, 2009). One important tool for examining the decision-making of consumers is the means-end chain (MEC) theory, which concludes with people's perception of product attributes and their linkage with consequences and personal values. The MEC theory's basic assumption is that people tend to choose products with attributes (='means') that lead to a desired outcome, which in turn matches their personal values and life goals (='end') (Gutman, 1982; Reynolds and Olson, 2001). MEC theory has hardly been used to identify drivers of consumers' organic food choices. The few published studies indicate that people in emerging (e.g. Taiwan) and mature markets (e.g. Italy, Germany, or the US) associate organics with health, good taste, rich nutrition, environmental protection, and food safety (Zanoli and Naspetti, 2002; Baker *et al.*, 2004; Chen *et al.*, 2015; Haas *et al.*, 2013). Hence, there is little known about the linkages between organic food's attributes, functions, and the consumers underlying values that form consumers' purchase intention (Wang *et al.*, 2019; Baker *et al.*, 2004), requiring

further research to increase the reliability and validity of previous results thereby offering insights into the potential for growth and development of organic food markets.

According to Schwartz (2012), personal values refer to goals that motivate action, e.g. organic food purchase intention. To contextualize and compare values, the Schwartz Theory of Basic Human Value (STV) has identified ten broad personal values, respectively 19 in the refined theory (Schwartz, 2012; Schwartz *et al.*, 2012). The theory has been prevalent in comparative cultural studies globally (Schwartz *et al.*, 2012), also in the context of organic food (Puska, 2019), and in connection with MEC theory (Torres *et al.*, 2016). Yet, the number of studies applying the STV is small with most of them being quantitatively based and limited to a few, mostly European, countries. The studies lack to reveal deeper insights into the consumer's mindset and neglect important Asian markets, which may be very different from European due to varying personal, societal, and cultural conditions. Understanding the consumer motives for purchasing organic food in different cultural contexts is essential for promoting sustainable and healthy food choices (Arsil *et al.*, 2016; Puska, 2019).

To fill this gap, this paper aims to provide insights into consumer motives for purchasing organic food in different cultural contexts. The research question guiding the study is to identify which values influence consumers' purchase intention for organic food in Thailand and Germany. We utilize in-depth interviews, applying MEC theory as a methodological framework and STV for result interpretation. The objectives are (1) to discover how consumers associate organic food attributes with values, and (2) to perform a cross-cultural comparison between the mature organic food market of Germany and the emerging market of Thailand. This paper represents the first study applying MEC theory in Thailand's organic food field and one of the very few combining MEC and STV for organic food, contributing pioneer research on (Asian) organic food markets. The findings provide valuable insights for producers and marketers to better cater to German and Thai consumers' needs and influence their purchase intention for organic food.

The study is constructed as follows: Section 2 introduces MEC theory and STV and studies on food using them. The research methodology is expounded on in Section 3 and results are resolved in Section 4. In Section 5, we discuss results from German and Thai perspectives as well as theoretical, managerial, and social implications. Section 6 presents the study's conclusion. Limitations and future research approaches are included in Section 7.

2 Theoretical Background

2.1 Means-End Chain Theory

The MEC theory was developed by Gutman (1982) and is based on several prominent psychological theories (Uijl *et al.*, 2015; Kilwinger and Dam, 2021; Reynolds and Olson, 2001), including personal construct theory (Kelly, 1955), attribute theory and cognitive structure (Rosenberg, 1956), and human values (Rokeach, 1973). As a value-based cognitive model, MEC allows researchers to understand not only what motivates consumers to purchase a product or service, but also why consumers value certain products or services (Kilwinger and Dam, 2021; Gutman, 1982; Reynolds and Gutman, 1988). Typically, MEC attempts to explain how a product or service is selected to fulfill the needs to attain desired goals (Veludo-de-Oliveira *et al.*, 2006). It demonstrates how consumers associate their knowledge about product attributes with a constellation of functional and psychological consequences thereby uncovering their underlying values (Kirchhoff *et al.*, 2011; Zanoli and Naspetti, 2002). The key assumption of MEC is that products are not bought for products themselves, but for the benefits associated with consuming them; hence, if a product satisfies consumers' needs (in terms of function and psychology) to a great extent, it can also help to actualize their goals and values (Costa *et al.*, 2004).

MEC theory emphasizes the association between product attributes, the consequences generated by the product attributes, and the personal values, that are strengthened by the consequence (Botschen and Hemetsberger, 1998), in the following referred to as Attribute-Consequence-Value (ACV) sequential process.

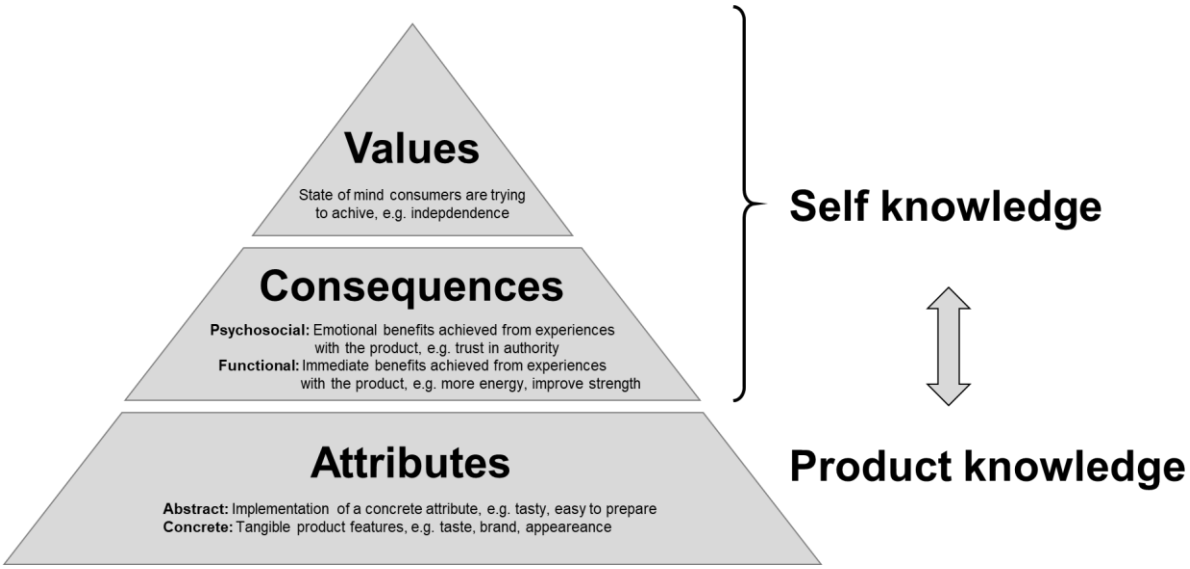

Figure 1: Framework of Means-end Chain Theory. Source: adapted from Saaka et al. (2004) and Uijl et al. (2015)

As shown in Figure 1, MEC contains three levels. Accordingly, "the higher the hierarchical level, the more the level of abstraction grows" (Leão and Mello, 2007, p. 4). At a higher level of abstraction, both functional consequences and psychological consequences are generated by the product attributes. At the highest level of abstraction, consumers' values will be uncovered (Walker *et al.*, 1987). Consequently, a hierarchical value map is to be developed to illustrate the linkages among attributes, consequences, and values (Reynolds and Gutman, 1988; Uijl *et al.*, 2015).

Specifically, the laddering interview technique is highly recommended to collect data for MEC studies: an interview technique, with which a "face-to-face, individual, in-depth, semi-structured interview" is conducted to underline the attribute-consequence-values linkage that consumers associate with particular products (Costa *et al.*, 2004, p. 405).

The MEC theory has been applied to customers of specific food products. For instance, Kirchhoff *et al.* (2011) conducted a laddering interview with 61 Australian vegetable consumers. By employing MEC techniques, the researchers concluded that respondents often associate vegetables with freshness, vitamins, and nutrition. Arsil *et al.* (2018) applied MEC to reveal the personal values behind Indonesian and Malaysian Muslims' consumption decisions regarding halal food in the scope of STV. Findings provide evidence that security plays a predominant role followed by tradition, benevolence, and achievement values orientation. Similarly, a MEC study by Baker *et al.* (2004) investigated the underlying values of organic food choices among Germans. 24 laddering interviews revealed three dominant perceptual orientations: health/enjoyment, belief in nature, and animal welfare. They also

found that the absence of pesticides, chemicals, and chemical fertilizers played a decisive role in the purchase decision.

In this context, MEC is considered to be an effective model for gaining consumer insights, especially consumers' product knowledge and their motivations for choosing products (Kilwinger and Dam, 2021). The reason is that when consumers are different in terms of knowledge, skill, and context, the way that they associate attributes to the consequence thereby formulating personal values could be varied (Storkerson, 2010). For this reason, the MEC theory together with the laddering interview technique is applied in this cross-cultural study, through which we could achieve an in-depth understanding of how organic consumers in different markets and cultural contexts are motivated to buy organic food.

Based on the aforementioned studies, MEC theory is suitable to reveal a hierarchical association of attribute-consequence-value constellations. However, there is limited evidence for a combination of MEC with STV. Therefore, we intend to fill this gap by conducting a comparative MEC study to deeply understand organic food consumption in mature and emerging markets

2.2 Schwartz's Theory of Basic Human Value

STV has been prevalent in comparative cultural studies globally (Schwartz *et al.*, 2012). According to Schwartz (1994, p. 21), human values refer to “desirable transsituational goals, varying in importance, that serve as guiding principles in people’s lives” (see also Imm Ng *et al.*, 2007). At the individual level, STV originally includes ten basic values, which are ”self-direction, stimulation, hedonism, achievement, power, security, conformity, tradition, benevolence, and universalism” (Schwartz and Bardi, 2001, p. 270; see also Imm Ng *et al.*, 2007). These ten basic values constitute a motivational structure that demonstrates “conflicts and compatibility” (Schwartz, 2012, p. 2) among the values that people may encounter when making a decision (Schwartz, 2006). Further, due to various issues including “multicollinearity, low internal reliabilities, and cross-loadings” (Schwartz *et al.*, 2012, p. 668; see also Davidov *et al.*, 2008; Knoppen and Saris, 2009), the original value theory was refined to solve the mentioned problems; as a result, 19 more nuanced values were derived. Moreover, Schwartz (2012) conceptualized his refined values in three layers. Firstly, the values are embedded into a framework of four adjacent and non-adjacent domains, covering conservation, openness to change, self-enhancement, and self-transcendence. In the second layer, the values are classified into personal-focus and social-

focus hemispheres (Rickaby *et al.*, 2020; Schwartz, 2015). Finally, the outermost layer differentiates between values related to anxiety and self-protection and the values dealing with self-development and free of anxiety (Torres *et al.*, 2016; Schwartz *et al.*, 2012).

Especially the second layer, distinguishing values by personal and social focus, is of interest to study. Koscielniak and Bojanowska (2019) showed that personal-oriented values (Hedonism, Power, and Stimulation) were rather associated with unethical behavior than socially-oriented values (Conformity and Tradition). Feldman *et al.* (2015) also found unethical behavior positively correlated with self-enhancement values (= personal focus) and negatively correlated with self-transcendence and conservation (= social focus).

Inspired by the findings of Schwartz (2012), more and more scholars have applied STV to understand how certain subjective priorities affect individual behavior in organic food purchase decisions. For example, Puska (2019) analyzed Finnish consumers' prosocial behavior through an online survey on organic food consumption. The findings indicate that the socially focused values of universalism, benevolence, tradition, conformity, and security are positively associated with a prosociality impression. Accordingly, when these value priorities are prevalent, people tend to acknowledge the organic consumer as prosocial, as organic food consumption is perceived as an innovative practice benefitting not only consumers but also others. Thøgersen *et al.* (2015) conducted a comparative study on organic food consumption in China and Brazil, confirming the significance of universalism (= social focus) in influencing consumers' attitudes toward buying organic food in both markets. Besides, Mainardes *et al.* (2017) conducted a study on consumer intention to buy organic food in Brazil, thereby attempting to reveal how personal-focused values shape consumers' attitudes and purchase intentions for organic food.

Concluding, STV seems appropriate for result interpretation in two respects. Firstly, based on the previous paragraph, the theory has already been successfully applied in the field of organic food regarding the social and personal-focused hemisphere layer. Secondly, as STV originally emerged from intercultural comparative studies (Schwartz, 2012), the theory is suitable to compare the findings from Germany as a mature market (Iweala *et al.*, 2019) with Thailand as an emerging market (Pham *et al.*, 2019).

3 Method

3.1 Data Collection

Interviewees were recruited from Germany and Thailand through the use of convenience sampling (Germany) and snowball sampling (Thailand). Data collection methods were tailored to suit different market conditions. In Thailand, the consumption of organic food is still largely restricted to high-income groups (Global Organic Trade, 2021), which presented a challenge in terms of recruiting participants who had experience with organic food. To overcome this, a snowball sampling technique was utilized to reach potential interviewees through referrals from experienced consumers. Conversely, in Germany where the organic food market is more developed and widespread, a convenience sampling approach was employed to recruit participants. The interviews were focused on individuals from Generation Y (born between 1981 and 1994), as this cohort is known to possess high purchasing power, strong consumer behavior, brand awareness, and a desire for a high standard of living (Göbbel, 2021).

To gather independent perspectives from participants, we utilized one-to-one semi-structured interviews, which provide a flexible and effective method for collecting in-depth information (Adams, 2015). Interviewees from Germany and Thailand were invited to take part in these interviews, which were conducted in German and English, respectively. We followed the recommendations of Ritchie *et al.* (2003) and limited the number of respondents for individual interviews to 50 or fewer to ensure better control over interview quality and to facilitate the analysis of complex results. The interviews were also conducted using a saturation technique, considered the gold standard in qualitative research, where interviews are concluded when no new information can be obtained (Morse and Coulehan, 2015).

Social desirability bias was highly considered when conducting the interviews. To overcome such bias and increase reliability, we first made clear the pertinence and the research methodology (Bispo Júnior, 2022) of the study and then adjusted the way to interview. To this end, we conducted a trial test with a few interviewees and eliminated any sensitive topics. During the interview, if the interviewee was unclear about the interview questions, real-time explanation and clarification were provided.

To ensure the reliability and validity of the interview data, the interview transcripts underwent a rigorous validation process, so-called member-checking. This involved verifying the accuracy of responses with the interviewees themselves, including a review of the written answers after the interviews. This measure served to confirm that the

interviewees had a complete understanding of the questions asked and that the interviewer had correctly interpreted their answers (Birt *et al.*, 2016).

In total, 31 interviewees from Germany and 30 from Thailand, with some market and product knowledge, were interviewed, which is consistent with previous qualitative studies on organic food (Baker *et al.*, 2004; Fotopoulos *et al.*, 2002; Kirchhoff *et al.*, 2011). Interviews were conducted between February and May 2021, lasted an average of 17 minutes, and due to the COVID-19 pandemic, were mostly conducted by telephone (71 % in Germany and 100 % in Thailand).

3.2 Interview Questionnaire Design

The interview questionnaire consists of five sections: (1) definition of 'organic food', which was read out to the interviewees, (2) filter question on the involvement in the decision-making process for grocery shopping, (3) consumer behaviour, (4) MEC, and (5) socio-demographics. After the introduction (sections 1-3), the interviewer initiated the MEC analysis by utilizing soft laddering and direct elicitation techniques. To ensure the validity of the questionnaire design, we drew inspiration from Kirchhoff *et al.* (2011) MEC study on food, which also employed soft laddering and direct elicitation. Soft laddering technique ensures "the subject's natural flow of speech" (Kirchhoff *et al.*, 2011, p. 1034) so that more complex cognitive structures will be profoundly revealed and understood (Kirchhoff *et al.*, 2011). Direct elicitation is especially suitable for exploratory studies where the respondents are only provided with the product category, e.g. 'organic food' as a stimulus and then can directly answer with what comes to their minds (Bech-Larsen *et al.*, 1997). Accordingly, when asked about product attributes, consumers were asked to identify three attributes that primarily influence their choice of organic food and why these things are important to their buying decision. After that, interviewees were asked about the reasons for the assignment of importance and the functional and social/psychological consequences that would be produced from eating organic food. Finally, based on the information they provided earlier, we unearthed hidden values that could portray personal life goals. Ulitmately, the interview ended with questions about the interviewees' socio-demographics.

3.3 Analysis

Data analysis and interpretation of the qualitative data from the MEC study follow the three-step process suggested by Reynolds and Gutman (1988), see Table 1 for a summary.

Step	Process	Explaination
1 Content Analysis	Content analysis of all elements of the collected ladders from the interviews	Seperate coding form to cluster the elements accordin to Attributes, Consequences, and Values
	Synthesiszing of the collected elements by employing synonyms and coding techniques to enable meaningful interpretation	• Summary codes based on established studies • Inter-coder reliability
	Assignment of letters and numbers to every element for the summary codes	• 1st digit = country code • 2nd digit = attribute, consequence or value • 3rd and 4th digit = consecutive numbering
2 Implication Matrix	Set up of the matrix to identify all aggregated connections	• Differentiation between direct and indirect connections • Determination of the dominant elements
3 Hierarchival Value Map	Construction of map to graph the linkages between the elements	• Linkages' strength is indicated by the line width • Cut-off level that covers ⅔ of all relations among elements

Table 1: Data analysis following the three-step process suggested by Reynolds and Gutman (1988)

Following the transcription of the interviews, the first step encompasses a content analysis of all elements of the collected ladders. Therefore, we draw all ladders on a separate coding form and clustered the elements according to the categories ‘Attributes’, ‘Consequences’, and ‘Values’, followed by the sub-categories, e.g., ‘Abstract Attributes’ and ‘Concrete Attributes’. The German ladders were translated into English by two bilingual German researchers for consistency. Subsequently, two researchers undertook the task of synthesizing the collected data by employing synonyms and coding techniques to enable meaningful interpretation. To facilitate better comparability, wherever possible, summary codes were based on established studies (Zanoli and Naspetti, 2002; Baker *et al.*, 2004; Haas *et al.*, 2013; Chen *et al.*, 2015; Kirchhoff *et al.*, 2011). To minimize potential interpretation bias and increase reliability, one of the researchers was kept blind to the data collection process. The inter-coder reliability was found to be approximately 85%, with any

15% discrepancies being addressed through discussion and consensus. This level of agreement is in line with the recommended standard for interrater reliability of at least 70%, as suggested by Perreault and Leigh (1989). To proceed with the summary codes, letters and numbers were assigned. The first digit represents the country code: the codes identified in Germany start with ‘G’, the ones from Thailand with ‘T’. The second digit describes the type of element: ‘A’ for attribute, ‘C’ for consequence, and ‘V’ for value. The last two digits are assigned based on consecutive numbering.

Secondly, an implication matrix is set up to identify all aggregated connections, displaying “the number of times each element leads to each other element” (Reynolds and Gutman, 1988, p. 20). Reynolds and Gutman (1988) differentiate direct and indirect connections between the elements. Direct connections are described as “implicative relationships among adjacent elements” (Reynolds and Gutman, 1988, p. 20) while indirect connections are “the connections among elements when there is another element between them” (Veludo-de-Oliveira *et al.*, 2006, p. 634). Direct connections are indicated by the numbers before the decimal character, indirect connections by the number after the decimal.

The third step comprises the construction of a hierarchical value map (HVM) to graph the linkages between the MEC elements. The linkages' strength is indicated by the line width: the thicker the line, the stronger the connection. To avoid confusion and ensure targeted results, Reynolds and Gutman (1988) recommend not transferring all connections from the implication matrix into the HVM, but only the most relevant, using connections with mentions above a certain cut-off level. The cut-off level usually requires “3 to 5 relations, given a sample of 50 to 60 individuals” whereby the remaining connections should cover at least “two-thirds of all relations among elements” (Reynolds and Gutman, 1988, p. 20). Once the cut-off level is set, it is known which elements are to be mapped in the HVM and one can start drawing the elements and connections, beginning with the first row of the implication matrix. To highlight the frequently mentioned connections, the line width is adapted.

The study utilized Microsoft Excel for data sorting, data preparation, descriptive analysis, and implication matrix and Microsoft PowerPoint for drawing the hierarchical value map. For further interpretation in cross-cultural comparison, the identified values were compared and classified following the STV (Schwartz, 2012).

4 Results

4.1 Interviewee Profile

The interviewees turned out to be heterogeneous in terms of their gender, age, housing situation, education, and employment status. The German participants' gender was evenly distributed (48.4% females), whereas in Thailand slightly more females were interviewed (60.0%). People in Thailand were slightly older (median 34 years old) than those from Germany (median 30 years old). The majority hold a university or college degree (64.5% in Germany, 100.0% in Thailand) and was private sector employed (58.1% in Germany, 93.3% in Thailand). German people's housing situation varied whereas most Thais lived with their families (73.3%).

4.2 Means-End Chain Analysis

In the content analysis, we summarized, categorized, and coded the interview elements of both countries using the same terms where possible. In Germany, a total of 43 codes (17 attributes, 17 consequences, and 9 values) were identified, in Thailand 53 codes (23 attributes, 19 consequences, and 11 values). The nominations varied between one and 37. As Reynolds and Gutman (1988) suggest to apply multiple cut-offs to yield informative and feasible results, we utilized a cut-off level of five resulting in a stable set of elements. This reduced the number of codes as follows: 27 codes in Germany (9 attributes, 11 consequences, and 7 values) and 25 codes in Thailand (10 attributes, 8 consequences, and 7 values). Table 2 provides an overview of the summary codes. A distinction between terminal and instrumental values was not made due to the poor assignability of the elements. However, this approach is not uncommon and has already been applied similarly in other studies (Baker *et al.*, 2004; Kirchhoff *et al.*, 2011; Zanoli and Naspetti, 2002).

Germany			Thailand		
Code	**Concrete Attribute**	**#**	**Code**	**Concrete Attribute**	**#**
G-A01	Absence of pesticides	15	T-A01	Price	11
G-A02	Appropriate animal husbandry	15	T-A02	Organic label	8
G-A03	Regional label	13	T-A03	Absence of chemicals	6
G-A04	Price	11	T-A04	Availability	5
G-A05	Absence of chemicals	6			
G-A06	Organic label	6			
Code	**Abstract Attribute**	**#**	**Code**	**Abstract Attribute**	**#**
G-A07	Optics	8	T-A05	Food safety & security	17
G-A08	Good taste	8	T-A06	More healthy	16
G-A09	Better production conditions	6	T-A07	Better ingredients	13
			T-A08	Good taste	11
			T-A09	Affordable	9
			T-A10	Optics	5
Code	**Functional Consequence**	**#**	**Code**	**Functional Consequence**	**#**
G-C01	Health benefits	37	T-C01	Health benefits	26
G-C02	Quality	24	T-C02	Enjoy life	15
G-C03	Animal welfare	13	T-C03	Culinary delights	8
G-C04	Environmental protection	11	T-C04	Save money	8
G-C05	Shorter transport routes	9	T-C05	Trust	7
G-C06	Supporting local economy	5	T-C06	Quality	7
G-C07	Supporting producers	5			
G-C08	Transparency	5			
Code	**Psychological Consequence**	**#**	**Code**	**Psychological Consequence**	**#**
G-C09	Contributing to environmental protection	12	T-C07	Feel good	13
G-C10	Contributing to personal health	9	T-C08	Feel safe	6
G-C11	Good consciousness / Satisfaction	5			
Code	**Values**	**#**	**Code**	**Value**	**#**
G-V01	Health of environment	19	T-V01	Quality of personal life	33
G-V02	Social responsibility	17	T-V02	Personal well-being	26
G-V03	Quality of personal life	12	T-V03	Self-fulfillment	16
G-V04	Personal well-being	11	T-V04	Responsibility for family	11
G-V05	Long life	7	T-V05	Secure personal future	10
G-V06	Respect for animals	6	T-V06	Health of environment	5
G-V07	Enjoyment/pleasure	5	T-V07	Trust in institutional setting	5

Table 2: List of Summary Codes

Following the content analysis, the study transformed the data into an implication matrix (see Table 3 and Table 4) – square matrixes measuring 27x27, respectively 25x25. The numbers in an implication matrix display the number of direct and indirect connections between two elements. Accordingly, in the German matrix, the number 8,01 in column ‘G-

C02’ and line ‘G-A04’ indicates eight direct and one indirect connections between the concrete attribute ‘Price’ and the functional consequence ‘Quality. That means that eight interviewees said a high price leads to quality, while one respondent connected both elements with another in between.

Implication Matrix - Germany																												
	G-A01	G-A02	G-A03	G-A04	G-A05	G-A06	G-A07	G-A08	G-A09	G-F01	G-F02	G-F03	G-F04	G-F05	G-F06	G-F07	G-F08	G-F09	G-F10	G-F11	G-V01	G-V02	G-V03	G-V04	G-V05	G-V06	G-V07	Total
G-A01								1,00		8,00	3,00										0,02							**12,02**
G-A02										1,00	1,00	11,00																**13,00**
G-A03											8,01		1,00	7,00	2,00	3,00	1,00											**14,00**
G-A04										4,00	1,00		1,00										0,01					**8,02**
G-A05												0,01				2,03												**6,00**
G-A06							1,00				7,00										0,01							**2,04**
G-A07										4,00													1,01	1,00				**8,01**
G-A08									1,00							2,02					0,01							**7,01**
G-A09																												**3,03**
G-F01										20,00									9,00	2,00	2,00	2,00	6,00	8,00	8,00		1,00	**36,00**
G-F02																					2,00	1,00	3,00			4,00	1,00	**27,00**
G-F03													1,00						4,00	1,00	5,00						1,00	**16,00**
G-F04														8,00					8,00	2,00	6,00	7,00						**23,00**
G-F05													7,00															**7,00**
G-F06																					1,00	5,00	1,00			1,00		**3,00**
G-F07										1,00		1,00																**8,00**
G-F08											1,00													1,00				**3,00**
G-F09																												**0,00**
G-F10																												**0,00**
G-F11																												**0,00**
G-V01																												**0,00**
G-V02																												**0,00**
G-V03																												**0,00**
G-V04																												**0,00**
G-V05																												**0,00**
G-V06																												**0,00**
G-V07																												**0,00**
Total	**0,00**	**0,00**	**0,00**	**0,00**	**0,00**	**0,00**	**2,00**	**0,00**	**35,00**	**24,01**	**12,01**	**9,00**	**7,00**	**2,00**	**6,02**	**3,03**	**12,00**	**9,00**	**5,00**	**14,04**	**18,01**	**11,01**	**10,00**	**8,00**	**5,00**	**4,00**		

Table 3: Implication Matrix – Germany

Implication Matrix - Thailand																										
	T-A01	**T-A02**	**T-A03**	**T-A04**	**T-A05**	**T-A06**	**T-A07**	**T-A08**	**T-A09**	**T-A10**	**T-F01**	**T-F02**	**T-F03**	**T-F04**	**T-F05**	**T-F06**	**T-F07**	**T-F08**	**T-V01**	**T-V02**	**T-V03**	**T-V04**	**T-V05**	**T-V06**	**T-V07**	**Total**
T-A01				1,00					5,00		1,00		3,00	1,00	1,00	0,01										**11,01**
T-A02												1,00			1,00	2,00					0,01				0,01	**4,02**
T-A03																										**8,00**
T-A04	1,00				1,00			1,00			1,00															**3,02**
T-A05										11,00	1,00	1,00							0,02							**14,00**
T-A06				3,00						10,00	2,00								1,00							**16,02**
T-A07				1,00			2,00	2,00			3,00				1,00	3,00			0,01		1,01				1,00	**13,00**
T-A08											3,00	6,00			1,00	1,00			1,00							**11,00**
T-A09										1,00	1,00		4,00	1,00					1,00		1,00					**9,00**
T-A10							1,00				1,00								0,01		1,01					**3,02**
T-F01											1,00								6,00	8,00	1,00	6,00	1,00			**23,00**
T-F02																			9,00		4,00	1,00	1,00			**15,00**
T-F03																			3,00	2,00	1,00					**6,00**
T-F04																			3,00		1,00		3,00			**7,00**
T-F05																				1,00					3,00	**4,00**
T-F06															2,00					4,00						**6,00**
T-F07																			4,00	7,00	1,00					**12,00**
T-F08																						1,00	4,00			**5,00**
T-V01																										**0,00**
T-V02																										**0,00**
T-V03																										**0,00**
T-V04																										**0,00**
T-V05																										**0,00**
T-V06																										**0,00**
T-V07																										**0,00**
Total	**0,00**	**1,00**	**0,00**	**0,00**	**6,00**	**7,00**	**0,00**	**3,00**	**8,00**	**0,00**	**23,00**	**14,00**	**7,00**	**7,00**	**7,00**	**6,01**	**0,00**	**0,00**	**27,04**	**22,00**	**9,02**	**10,01**	**9,00**	**1,00**	**3,01**	

Table 4: Implication Matrix – Thailand

Before processing the implication matrix into an HVM, Reynolds and Gutman (1988) suggest a cut-off level between three and five that covers at least two-thirds of all connections. As a cut-off level of five and four covered too few relations, a cut-off level of three direct connections, covering 80.6% of the relations in Germany and 71.7% in Thailand was applied. Based on that, an HVM was drawn for each country (see Figure 2 and Figure 3). The maps of Germany and Thailand include ten identical elements, namely ‘price’ (A), ‘absence of chemicals’ (A), ‘organic label’ (A), ‘optics’ (A), ‘good taste’ (A), ‘health benefits’ (C), ‘quality’ (C), ‘health of environment’ (V), ‘quality of personal life’ (V), and ‘personal well-being’ (V). The other elements (17 in Germany, 15 in Thailand) differentiate.

Figure 2: *Hierarchical Value Map – Germany*

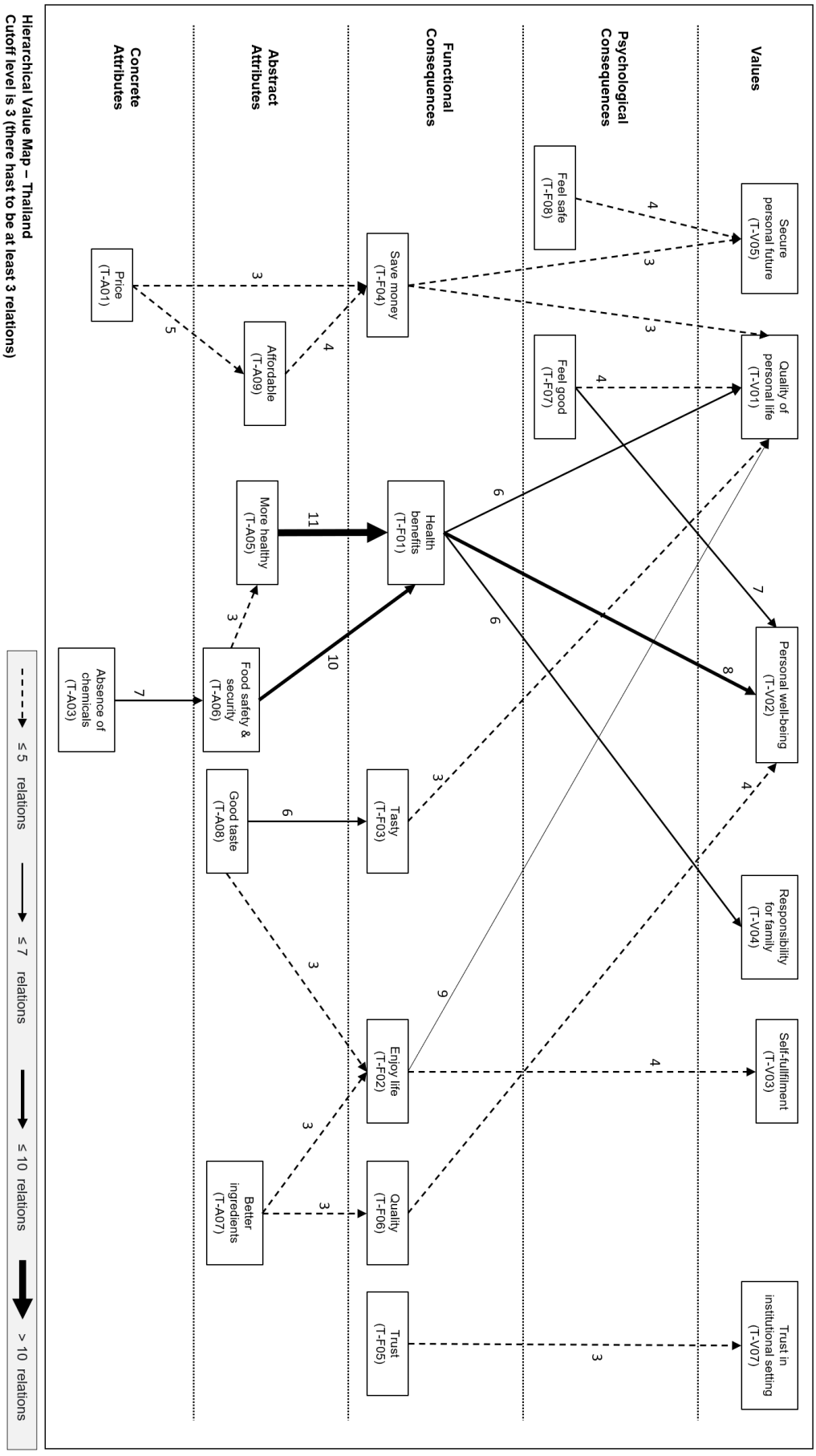

Figure 3: Hierarchical Value Map – Thailand

The most dominant ladders in Germany exist between ‘appropriate animal husbandry’ (G-A02) ➔ ‘animal welfare’ (G-F03; 11 direct connections) ➔ ‘health of environment’ (G-V01; 5 direct connections) as well as between ‘price’ (G-A04) ➔ ‘quality’ (G-F02; 9 direct connections) ➔ ‘health benefits’ (G-F01; 20 direct connections) ➔ ‘contributing to personal health’ (G-F10; 9 direct connections). Thereby, the most frequently mentioned consequence 'health benefits' (G-F01; 37 nominations) is based on several values that are rated almost equally: ‘personal well-being’ (G-V04), ‘long life’ (G-V05), and ‘quality of personal life’ (G-V03). Considering the underlying values, 'health of environment' (G-V01; 19 nominations) was mentioned most frequently, followed by ‘social responsibility’ (G-V02; 17 nominations).

In Thailand, the most relevant ladder is ‘more healthy’ (T-A03) ➔ ‘health benefits’ (T-F01; 11 direct connections) ➔ ‘personal well-being’ (T-V02; 8 direct connections). As in Germany, the most frequently mentioned consequence 'health benefits' (T-F01) is subject to different values, which are largely evenly distributed: ‘quality of personal life’ (T-V01), ‘personal well-being’ (T-V02), and ‘responsibility for family’ (T-V04). In addition, the attribute 'food safety & security' (T-A06; 17 nominations) has a relatively strong connection to the consequence 'health benefits' (T-F01; 10 direct connections).

4.3 Application of Schwartz's Theory of Basic Human Values

The study applied STV to interpret the observed values of the MEC theory, to gain a deeper understanding of how values affect people’s purchase intention in developed (Germany) and emerging organic food markets (Thailand). For the interpretation of only informative and feasible results, we focused on the five most mentioned values in each country. The values considered are as follows: (for Germany) ‘health of environment’ (G-V01), ‘social responsibility’ (G-V02), ‘quality of personal life’ (G-V03), ‘personal well-being’ (G-V04), and ‘long life’ (G-V05); (for Thailand) ‘quality of personal life’ (T-V01),’ personal well-being’ (T-V02), ‘self-fulfilment’ (T-V03), ‘responsibility for family’ (T-V04), and ‘secure future’ (T-V05).

Based on the circular structure of the refined STV of Schwartz *et al.* (2012), the identified values can be attributed to the personal and social-focus hemispheres as depicted in Table 5. Schwartz *et al.* (2012, p. 669) briefly explained these values as follows:

- (no. 4) Hedonism: pleasure and sensuous gratification
- (no. 5) Achievement: success according to social standards
- (no. 9) Security-personal: safety in one’s immediate environment
- (no. 16) Benevolence-caring: devotion to the welfare of ingroup members

- (no. 17) Universalism-concern: commitment to equality, justice, and protection for all people
- (no. 18) Universalism-nature: preservation of the natural environment

Values (MEC analysis)	Values	Focus hemispheres	Ranking Germany	Ranking Thailand
Health of environment	Universalism-nature	Social	1	---
Social responsibility	Universalism-concern	Social	2	---
Responsibility for family	Benevolence-caring	Social	---	4
Quality of personal life	Hedonism	Personal	3	1
Personal well-being	Security-personal	Personal	4	2
Long life	Hedonism	Personal	5	---
Self-fulfilment	Achievement	Personal	---	3
Secure future	Security-personal	Personal	---	5

Table 5: Assignment of the identified values to Schwartz's Theory of Basic Human Value

The assignment shows that the four most frequently mentioned values of the Thai people can be traced back to a personal focus, while for Germany, two values each are personal and socially focused. However, the most frequently mentioned German values 'health of the environment' and 'social responsibility' arise from social motives.

5 Discussion

5.1 Values Influencing Organic Food Purchase Intention

Following the research question to identify which values influence consumers' purchase intention for organic food, we applied MEC theory to derive ACV sequences that demonstrate motivators for organic food purchase intentions. Accordingly, the first objective of this study was to discover how consumers associate attributes of organic food with corresponding values.

The value ‘quality of personal life’ was one of the main motives among German and Thai consumers. Based on the interviews, it comprises enjoyment, pleasure, good mood, leisure, and relaxing time. The value is primarily achieved through the concrete attribute of ‘absence of chemicals’ and ‘absence of pesticides’, leading to the consequence 'health benefits'. Thus, people consume organic food because they want to avoid unhealthy substances in food production to contribute to their health. In turn, good health is important to achieve 'quality of life'. Various researchers have already proven that consumers connect

organic food with a comfortable and enjoyable life. Zanoli and Naspetti (2002) found happiness and inner harmony among the most relevant underlying values for Italian organic food consumers. Enjoyment of life is also a significant value among Australians (Kirchhoff *et al.*, 2011), Germans (Baker *et al.*, 2004), and Taiwanese (Chen *et al.*, 2015). Similarly, a study by Haas *et al.* (2013) identified ‘quality of life’ as a driving value in the purchasing decision in the U.S.

The ACV sequence of ‘quality of life’ also applies to the values ‘long live’ and ‘personal well-being’ which were strongly connected to the different perceptions of health: a healthy lifestyle, avoiding getting sick, building a strong immune system, or energetic life. Previous studies confirm that organic food consumers are health-conscious and that it is one of the main motives for organic purchases (Zanoli and Naspetti, 2002; Baker *et al.*, 2004; Haas *et al.*, 2013; Chen *et al.*, 2015; Roitner-Schobesberger *et al.*, 2008).

The value ‘health of environment’, focusing on an intact ecosystem, plants, and animals, as well as the value ‘social responsibility’ which includes civic duty and the consideration of society at large follow a different argument. Both elements were derived by the German interviewees in such a way that they attach great importance to the attributes of 'regional origin', 'better production conditions', and 'appropriate animal husbandry' when purchasing organics. The most important consequences associated with these product attributes are 'animal welfare' and 'environmental protection'. By buying organics that promise good production conditions and appropriate animal husbandry, people want to contribute to environmental protection and take responsibility for fellow human beings. Other studies also support the high value placed on environmental protection among organic consumers. A German MEC study by Baker *et al.* (2004) suggests ‘belief in nature’ as a dominant value of organic food choices thereby confirming a national stereotype. They argued that the absence of pesticides, chemicals, and fertilizers is a key sales argument in Germany. In the developed markets of the U.S., Taiwan, and China, environmental health concerns and the appreciation of nature have also been identified as decisive factors (Ahmed *et al.*, 2021; Haas *et al.*, 2013; Chen *et al.*, 2015).

The value 'responsibility for family' was observed among Thai interviewees and comprises good caring for their children and older family members as well as their health. 'Responsibility for family' is triggered by the attribute 'absence of chemicals' and ‘food safety & security’, leading to perceived 'health benefits'. Here, too, the consumption of safe organic food should contribute to personal health and thus ensure that consumers can take care of their families. The literature shows that social responsibility, in the broader and narrower

sense, is an influencing factor for organic food purchases. For example, Kirchhoff *et al.* (2011) observed ‘enjoy family’ as ranking high on the values rankings of Australian organic consumers; in a similar vein, Chen *et al.* (2015) highlighted that Taiwanese consumers emphasized ‘social responsibility’ when buying organic rice.

The value 'secure personal future' observed in Thailand is based on the idea that the attribute ‘price’ is also important when buying organics. Consumers want to save money when shopping, which in turn serves to finance their livelihood and also their future. However, price may not be a reason for buying organic food, as these foods tend to be more expensive than conventionally produced ones, but it influences the decision to buy the product or not.

Lastly, the value of ‘self-fulfillment’ meaning that the interviewees can achieve or purchase what they want was also highly associated with the purchase of organics. Achieving this personal life goal is based on being able to buy food that has a 'good taste' and contains 'better ingredients', which leads to an enjoyment of life and in further consequence to the fulfillment of goals and dreams. Other researchers also found ‘achievement,’ ‘self-fulfilment,’ ‘achieve goals,’ and ‘sense of achievement’ as relevant factors for organic food purchases when conducting MEC theory in developed markets (Zanoli and Naspetti, 2002; Kirchhoff *et al.*, 2011; Chen *et al.*, 2015).

In line with the research question, the second research objective aimed to perform a cross-cultural comparison between the mature organic food market of Germany and the emerging market of Thailand. Accordingly, a similarity was found in the relevance of the values ‘quality of personal life’ and ‘personal well-being’ that motivate consumers in both countries to purchase organics. However, a major difference between Germany and Thailand is that the other values were not recorded in the respective other country. This finding already indicates a considerable difference in the underlying values-perception when buying organic food. Moreover, there are differences in the prioritization of the values. While 'quality of personal life' was the most cited value in Thailand, in Germany it is 'health of environment’. Another manifest difference is that Germans emphasized ‘social responsibility’, whereas Thai consumers focus on their inner circle, the ‘responsibility for family’.

5.2 Personal and Social Values in the Scope of the Schwartz Values Theory

To further examine the second research goal, the study applied the circular structure of the refined STV of Schwartz *et al.* (2012) for cross-cultural comparison. Schwartz (1992, 2012) differentiates between social and personal-focused values. Social-focused values govern how people interact with each other and influence their interests. Personal-focused values govern how people display personal features and interests. This study found that four of the five most important values in Thailand (quality of personal life, personal well-being, self-fulfilment, and responsibility for family) are personally focused, while for Germany, the two most mentioned values are socially motivated (health of environment and social responsibility).

Accordingly, it can be assumed that the purchase of organic food in Thailand is rather individually driven and identity-related. Buying organics seems to be an expression of personal motives such as self-enhancement and conservation (Schwartz, 2012). Purchasing these foods might be perceived as a luxury that one occasionally affords to enjoy the current life. A study by Srikes *et al.* (2009) supports this finding, as they observed that Thais have a high association with 'Hedonism' when purchasing mobile phones – a good that indicates financial and social status.

The observed personal-driven motives presumably comprise not only the individual itself but also its (extended) family. In Thailand, family is very important and a strong emphasis on its ties exists. Family is the foundation of social life and since several generations often live together in one house, the younger generation generally has a high sense of duty and responsibility towards the older (Cultural Atlas, 2021). However, Sortheix and Lönnqvist (2014) argue that in states with a lower human development index (HDI) position, people tend to care more for their interests and close relatives than for their broader social environment. Accordingly, personal-focused values can be understood as some kind of self-protection as the relationship between values and subjective well-being is dependent on how well those values assist people to cope with their surroundings. Sortheix and Schwartz (2017) complement the argument as they explain that personal-focused values can give an edge in low egalitarian societies, compensating for unequal opportunities.

The purchase decision of Germans, in contrast, seems to be based more on social-focused values. Particular emphasis is placed on values that can be assigned to universalism, which goal is the "understanding, appreciation, tolerance, and protection for the welfare of all people and for nature" (Schwartz, 2012, p. 7). In Germany, environmental protection is considered a major challenge for the future by almost two-thirds of the

population. Sustainable agricultural policy, including organic farming, is of particular importance for a majority of people (59%; Umweltbundesamt, 2020). This observation could be explained by a well-defined mental frame - due to omnipresent political and public discussions concerning environmental protection and sustainability, environmental education, and a broad view on social impacts of environmental performance due to widespread media reporting and coverage. Moreover, also Germany with its temperate climate experienced the negative effects of climate change in recent years (e.g. heat, floods, droughts, and forest diebacks), which is why people are interested in environmental protection, not least to ensure their high quality of life (Umweltbundesamt, 2021).

Baker *et al.* (2004) also observed an “us orientation” among Germans when choosing non-genetically modified foods, as it is beneficial to society at large. Sortheix and Lönnqvist (2014) argue that countries with a high HDI, such as Germany, are more socially focused as they have fewer limitations to achieve their personal goals, which enable them to follow and contribute to prosocial behavior. Sortheix and Schwartz (2017) further outline that egalitarian societies rather follow social-focused values to pursue harmony and preserve cooperative relations, as these attributes are required to coordinate groups that follow common goals such as environmental protection and social responsibility.

5.3 Implications

From a theoretical point of view, this study contributes to the existing literature in three ways. First, the findings contribute to a better knowledge of consumers’ purchase intention by providing evidence on various new ACV sequences of organic food purchases. The research methodology revealed new types of attributes, consequences, and values on which further research can be based. Secondly, this is one of the few studies that conducted qualitative in-depth interviews following MEC theory and STV and the first study that applies MEC theory in the field of organic food in Thailand. As the number of existing MEC studies on organic food is small, this paper offers a more thorough and theory-based examination of an increasingly important research field. Thirdly, this is one of the first research that applied STV to disclose how personal and social-focused values shape the purchase intention for organics, thereby following the suggestion of Chen *et al.* (2015) to apply STV for cross-cultural comparison purposes.

In terms of managerial implications, marketers should on the one hand use the findings of this paper to better address consumers' needs to influence their purchase behavior towards increased organic food consumption. Accordingly, we suggest using the identified

ACV sequences for target-oriented communication and marketing strategies (Zanoli and Naspetti, 2002). The findings can be applied to develop storylines for advertisements, that create positive associations and position the products strategically (Fotopoulos *et al.*, 2002; Kirchhoff *et al.*, 2011). On the other hand, the cultural background should also be taken into account, as the study has shown that the elements and priorities of ACV can vary across countries. Accordingly, a possible storyline for a German advertising campaign could be to highlight the absence of pesticides and chemicals in organic food, which is beneficial for personal health so that one can still live an active and healthy life in old age. In Thailand, personal health is also a focus, but with the aim of being able to take good care of one's family.

From a social point of view, encouraging and developing organic agriculture and consumption corresponds to the sustainable development goals advocated by the United Nations. However, the production and marketing of organic products, and even consumer education, can vary in developed and developing countries. Therefore, based on our conclusions, producers and marketers of organic products can have a deeper understanding of the similarity and heterogeneity of consumer behavior in different cultural and market environments, so that they can adjust their practices accordingly and make more targeted production and sales of organic products. Such adjustments will make organic products more and more popular, especially in developing countries, and consumers will have more opportunities to know about and consume organic products. Ultimately, our consumption pattern tends to be more sustainable

6 Conclusion

This study applied qualitative MEC theory and STV for results interpretation to answer the research question of identifying which values influence consumers' purchase intention for organic food in Thailand and Germany. The study focused on the underlying values to understand how consumers associate their knowledge about organics' attributes with the personal benefits arising from their consumption (Kirchhoff *et al.*, 2011; Zanoli and Naspetti, 2002; Costa *et al.*, 2004). To derive similarities and differences in value perception between international markets, the developed organic food market of Germany and the emerging Asian market of Thailand were examined, using STV. The research revealed that German and Thai consumers were both motivated by the values 'quality of personal life' and 'personal well-being' to purchase organic food. Differences arise in the perception of 'social responsibility' and 'health of environment', which was emphasized in Germany, versus

‘responsibility for family’ which was highlighted in Thailand as a motivator for organic consumption.

Focusing on the five most important values in each country, the survey applied the circular structure of the refined STV of Schwartz *et al.* (2012) for cross-cultural comparison. Concluding a more personal-focused value system in Thailand, respectively a rather social-focused one in Germany that motivates consumers to purchase organics.

This paper contributes to the literature as it is one of the few qualitative studies on organic food purchase intention using MEC and STV and the first one conducted in Thailand. The findings suggest better addressing consumers' values and needs to increase organic food consumption as this benefits not only the environment and personal health but also society at large.

7 Limitations and Future Research

As with all empirical studies, this paper has several limitations from which further research approaches can be derived. First, the data is based on a limited number of personal interviews, which could arouse answers according to social desirability and may therefore not be representative of the general population. To reduce the social desirability bias, we made clear the pertinence and the research methodology of the study to the interviewees and then adjusted the way to interview. However, especially among German respondents, with their strong orientation on social goals, the answers could be influenced by conformity and the desire to comply with public values and common normative expectations. This may have led to ‘health of environment’ and ‘social responsibility’ as the most frequently named values in the interviews. A survey situation without the physical presence of an interviewer, for example via a quantitative computer-administered survey, may reduce the effect of social desirability bias and could significantly extend the sample size in future studies.

Second, limitations may also result from the heterogeneous samples, as Thai interviewees were on average some years older than the Germans. This may result in different life goals and priorities, e.g., a higher focus on ‘responsibility for family’ among the Thai people who probably already have children, whereas the German sample is not yet thinking about family planning. To limit this bias, we collected data according to the different market conditions: convenience sampling in Germany where organic food is rather common, and snowball sampling in Thailand, where organic food is still a niche product. Yet, we suggest complementing the present study with a larger and more diverse sample to produce

further empirical evidence concerning our basic findings. Data from other developed and emerging countries should also be collected to validate the observed elements, especially values.

Thirdly, another limitation lies in the context of decision-makers in social and personal-driven markets. Generally speaking, values tend to remain fairly consistent over time, in various situations and contexts (Schwartz, 1992). However, personal values are not static and can evolve (Schwartz, 2012). Accordingly, findings of the socially motivated Thai customers seem more consistent than those from Germany, as personal-focused values can change over time. Decision-makers must consider evolving personal values when applying our findings. Monitoring changes in consumer motivations and values is vital, requiring adaptable strategies and ongoing longitudinal studies for effective marketing in personal-driven markets.

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