ESSAYS ON CONSUMER PREFERENCES FOR ETHICALLY CERTIFIED FOOD PRODUCTS

ESSAYS ON CONSUMER PREFERENCES FOR ETHICALLY CERTIFIED FOOD PRODUCTS

DISSERTATION

TO ATTAIN THE DOCTORAL DEGREE DR. AGR. SC.

OF THE FACULTY OF AGRICULTURAL SCIENCES

GEORG-AUGUST-UNIVERSITY GÖTTINGEN

SUBMITTED BY SARAH IWEALA BORN IN NORDHAUSEN, GERMANY

GÖTTINGEN, THE 14TH OF MARCH 2022

1. REFEREE: PROF. DR. ACHIM SPILLER

2. REFEREE: PROF. XIAOHUA YU, PH.D.

3. REFEREE: PROF. DR. HARALD GRETHE

DATE OF ORAL EXAMINATION: 30 MAY 2022

SUMMARY

This cumulative dissertation contributes to the mounting understanding of the multitude of factors that influence consumers to opt for food products with ethical or sustainable attributes. It consists of four independent research papers, which shed light on the different aspects of consumers' motives to purchase ethically, their support for different standard specifications and on ways various message frames and their source can boost the valuation of such products. The presented dissertation defines its boundaries in terms of study sites (China, Germany, UK), certification schemes (climate-neutral, Fairtrade, organic, Rainforest Alliance) and food products (chocolate, tea). The interpretation and discussion of the evolving results are within those boundaries.

CHAPTER ONE introduces theoretical concepts on which this dissertation build, presents the various study sites and certification schemes and highlights the importance of consumer choice in moving towards more sustainable food systems. CHAPTER TWO exploratively assesses the role of the warm glow of giving in the evaluation of chocolate with ethical claims. The warm glow is defined as the personal benefit people derive when doing good irrespective of the consequences. The empirical analysis is based on a consumer survey and choice experiment in the UK and Germany (N=1,000). We capture participants' level of the warm glow of giving via statement batteries. Our results suggest a stronger association between the warm glow and the intention to purchase the Fairtrade labelled chocolate as compared to other tested labels. We attribute this relationship to a strong and clear public good characteristic of the Fairtrade certification and its high awareness among participants. By choosing Fairtrade certified chocolate, consumers know they contribute to a greater good; hence, the warm glow feeling is associated with it. CHAPTER THREE shifts the focus to the design of certifications and identifies the most valued features of sustainability standards from a consumer perspective. By including a sustainability governance perspective, we incorporate often neglected features in our experiment. We also take a more nuanced look at the various specifications of sustainability standards by not employing them in a dichotomous manner, but by including multiple levels of standard stringency. Our analysis is based on a choice-based conjoint experiment with tea drinkers in China and the UK (N=2,000). Our findings show that consumer support for sustainable tea standards in both countries is primarily driven by food safety concerns, to a lesser extent by concerns about environmental and labour issues. Moreover, Chinese consumers support highly stringent standards only, whereas British consumers also accept medium-level standards. Standard sponsors and origin only matter for consumers in China.

The second part of this dissertation analyses how the valuation for prosocial and pro-environmental certifications can be increased. Studies in CHAPTER FOUR and CHAPTER FIVE employ different messages as treatments to measure possible effects on consumers' willingness-to-pay (WTP) for ethically certified products. CHAPTER TWO and CHAPTER FOUR are linked conceptually as they focus on the concept of the warm glow. The positive link between the warm glow and consumer preferences for the Fairtrade claim found in CHAPTER TWO is examined further. To

explore whether the warm glow can be utilized as a nudge to increase consumers' valuation of ethically certified products, we conduct a binding online experimental auction with consumers in Germany (N=1,000). Participants bid on tea and chocolate advertised with prosocial and pro-environmental labels after being randomly exposed to affectively and informatively framed messages. We also measure the experienced warm glow level of participants, and hypothesize a positive interaction between the warm glow level and the affective message. However, we find no such interaction but differing treatment effects according to standard type. Products with the pro-environmental certification receive higher bids in the treatment arms.

CHAPTER FIVE shifts the focus towards informative messaging in order to increase consumers' valuation for chocolate with prosocial certification. The emphasis is on the role of information source and communicated effect statement. In an online survey, consumers in Germany (N=2,500) are randomly assigned to one of five information treatments or a control group. We find that the already high WTP for certified chocolate is robust to additional information provision irrespective of its source. Yet, purchasing intention can be incentivized by additional information when provided by a retailer or the government. In respect of the effect statement, we find that a supportive statement influences neither WTP nor purchase intention, whereas an unsupportive (zero effect) statement influences the purchase intention negatively. Here, a university serves as the source of both statements. CHAPTER SIX embeds all findings and policy recommendations of each study in a broader discussion of the role consumer choices play in moving towards more sustainable food systems.

SUMMARY (GERMAN)

Diese kumulative Dissertation trägt zu einer wachsenden Literatur bei, die eine Vielzahl von Faktoren analysiert, die Verbraucher:innen beeinflussen, sich für Lebensmittel mit ethischen oder nachhaltigen Eigenschaften zu entscheiden. Sie besteht aus vier unabhängigen Forschungsarbeiten, die die verschiedenen Aspekte der Motive von Verbraucher:innen für einen ethischen Kauf, ihre Unterstützung für verschiedene Standardspezifikationen und die Art und Weise, wie verschiedene Botschaften und deren Quelle die Bewertung solcher Produkte steigern können, beleuchten. Die vorliegende Dissertation nimmt Abgrenzungen in Bezug auf Studienstandorte (China, Deutschland, Vereinigtes Königreich), Zertifizierungssysteme (klimaneutral, Fairtrade, Bio, Rainforest Alliance) und Lebensmittel (Schokolade, Tee) vor; die Interpretation und Diskussion der Ergebnisse bewegen sich innerhalb dieser Abgrenzungen.

KAPITEL EINS führt in die theoretischen Konzepte ein, auf denen diese Dissertation aufbaut, stellt die verschiedenen Studienstandorte und Zertifizierungssysteme vor und unterstreicht die Bedeutung der Verbraucherentscheidung für die Entwicklung nachhaltigerer Lebensmittelsysteme. KAPITEL ZWEI untersucht die Rolle des *warm glow of giving* bei der Bewertung von Schokolade mit ethischem Anspruch. Der *warm glow* ist definiert als der persönliche Nutzen, den Menschen erhalten, wenn sie ungeachtet der Konsequenzen Gutes tun. Die empirische Analyse basiert auf einer Verbraucherumfrage mit Choice Experiment im Vereinigten Königreich und in Deutschland (N=1000). Das Ausmaß des *warm glow* – Gefühls wurde über Selbsteinschätzungen der Teilnehmenden erfasst. Unsere Ergebnisse deuten auf eine stärkere Assoziation zwischen dem *warm glow* und der Absicht hin, Schokolade mit dem Fairtrade-Siegel zu kaufen, im Vergleich zu den anderen abgefragten Siegeln. Wir führen diesen Zusammenhang auf eine starke und eindeutige Gemeinwohl-Eigenschaft der Fairtrade-Zertifizierung und ihrem hohen Bekanntheitsgrad unter den Teilnehmenden zurück. Die Verbraucher:innen wissen, dass sie mit dem Kauf von Fairtrade-zertifizierter Schokolade einen Beitrag zum Allgemeinwohl leisten. Daher wird das Gefühl des *warm glow* mit der Kaufabsicht in Verbindung gebracht. KAPITEL DREI verlagert den Schwerpunkt auf die Gestaltung von Zertifizierungen und ermittelt aus Verbrauchersicht die am meist-geschätzten Merkmale von Nachhaltigkeitsstandards. Durch die Einbeziehung einer Governance-Perspektive haben wir in unserem Experiment zumeist vernachlässigte Merkmale berücksichtigt. Außerdem werfen wir einen differenzierteren Blick auf die verschiedenen Spezifikationen von Nachhaltigkeitsstandards, indem wir sie nicht in dichotomer, sondern mehrstufiger Weise einbeziehen. Unsere Analyse basiert auf einem Choice Experiment mit Teetrinkern in China und dem Vereinigten Königreich (N=2000). Unsere Ergebnisse zeigen, dass Verbraucher:innen in beiden Ländern in erster Linie nachhaltige Teestandards unterstützen, die sich auf die Lebensmittelsicherheit beziehen. In etwas geringerem Maße führen Umweltstandards und Standards hinsichtlich der Arbeitsbedingungen zur Unterstützung durch die Teilnehmenden. Verbraucher:innen in China schätzen nur sehr hohe Standards, britische Verbraucher:innen akzeptieren auch Standards auf mittlerem Niveau. Ursprung und Sponsoren von Standards spielen nur für unsere Teilnehmenden in China eine Rolle.

Im zweiten Teil dieser Arbeit wird analysiert, wie die Wertschätzung für soziale und umweltfreundliche Zertifizierungen erhöht werden kann. In den Studien in KAPITEL VIER und KAPITEL FÜNF werden verschiedene Botschaften als Interventionen eingesetzt, um mögliche Auswirkungen auf die Zahlungsbereitschaft der Verbraucher:innen für ethisch zertifizierte Produkte zu messen. KAPITEL ZWEI und KAPITEL VIER sind konzeptionell miteinander verknüpft, da sie sich auf das Konzept des *warm glow* konzentrieren. Der in KAPITEL ZWEI festgestellte positive Zusammenhang zwischen dem *warm glow* und den Verbraucherpräferenzen für das Fairtrade-Label wird weiter untersucht. Kann der *warm glow* als Anreiz genutzt werden, um die Wertschätzung der Verbraucher:innen für ethisch zertifizierte Produkte zu erhöhen? Um dies herauszufinden, haben wir eine verbindliche experimentelle Online-Auktion mit Verbraucher:innen in Deutschland (N=1000) durchgeführt. Die Teilnehmenden gaben Gebote auf Tee und Schokolade mit sozialen und umweltfreundlichen Zertifizierungen ab, nachdem sie affektive und informative Botschaften zufällig erhalten hatten. Wir fragten auch das *warm glow*-Gefühl der Teilnehmenden ab und stellten die Hypothese auf, dass es eine positive Wechselwirkung zwischen dem *warm glow* und der affektiven Botschaft gibt. Wir fanden solch eine Wechselwirkung nicht, aber unterschiedliche Effekte der Interventionen je nach Zertifizierungstyp. Produkte mit umweltfreundlicher Zertifizierung verzeichneten höhere Gebote, wenn Teilnehmende zuvor eine der beiden Botschaften erhalten hatten.

KAPITEL FÜNF verlagert den Schwerpunkt auf informative Botschaften, um die Wertschätzung der Verbraucher:innen für Schokolade mit sozialer Zertifizierung zu erhöhen. Das Augenmerk liegt dabei auf der Rolle der Informationsquelle und der Wirkungsaussage der Botschaft. In einer Online-Befragung wurden Verbraucher:innen in Deutschland (N=2500) nach dem Zufallsprinzip einer von fünf Interventionsgruppen oder einer Kontrollgruppe zugewiesen. Es zeigt sich, dass die ohnehin hohe Zahlungsbereitschaft für zertifizierte Produkte unabhängig von der Informationsquelle robust gegenüber zusätzlichen Informationen ist. Allerdings kann die Kaufabsicht durch zusätzliche Informationen angeregt werden, wenn diese von einem Lebensmitteleinzelhändler oder der Regierung (Ministerium) bereitgestellt werden. In Bezug auf die Wirkungsaussage stellen wir fest, dass eine unterstützende Aussage weder die Zahlungsbereitschaft noch die Kaufabsicht beeinflusst. Bei selber Informationsquelle (Universität), kann jedoch eine nicht unterstützende Aussage (Null-Effekt) die Kaufabsicht negativ beeinflussen. KAPITEL SECHS bettet alle Ergebnisse und politischen Empfehlungen der einzelnen Studien in eine umfassendere Diskussion über die Rolle der Verbraucherentscheidungen auf dem Weg zu nachhaltigeren Ernährungssystemen ein.

ACKNOWLEDGEMENTS

Completing this thesis took a while. Despite the length of the journey, I enjoyed every bit of it. Not only because of the topics I worked on, but because of all the fantastic people along the way.

First of all, I would like to thank my supervisor, Professor Achim Spiller, for creating the opportunity for me to write this thesis under his supervision and expertise. I could not have imagined a better and more supportive working environment than the one that you have created at your chair. Feedback is always constructive and very helpful, new research ideas are always welcome and hikes, picnics and boat trips are always fun!

I would further like to extend my heartfelt thanks to Professor Xiaohua Yu and Professor Harald Grethe for taking the time to serve as members of my examination board, reading and evaluating these pages!

My post-doc advisors, Stephan Meyerding and eventually Dominic Lemken, stand out with the guidance they have provided me with. Dominic, I thank you especially for all the methodological help and discussions about conceptual ideas.

A huge thanks goes to my other fantastic co-authors from whom I have learned so much. Rudy, thank you for teaching us all about experimental auctions at the summer school and advising me thereafter on my own auction design. Yixian, thanks to you my view on ethical certifications expanded and now includes a very valuable sustainable governance perspective. Anette and Liza, I really learnt a lot from both of you thanks to your fantastic analytical skills and very structured approach. I am really happy that we are already working on a new project together that will allow us to keep in touch.

I thank the large GlobalFood family! It was always great coming over to the HDW and have coffee and chat and hearing from everyone's research – though all that feels like it took place ages ago. Jessie, thank you for all the lunches and laughs in the last couple of months!

From back in the day as coming to the office was still a thing: Cynthia, you were the best office mate I could have wished for. Us going together to Bolzano for the summer school was definitely one of my highlights during the PhD.

Of course, my thank goes to all of my colleagues and friends at the marketing chair for all the chats over lunch and all the open doors! If I have any question, I know there is someone with an answer. From my very biased view, this is the very best chair to work at.

On this very last stretch of finishing up, I thank especially Sophie-Dorothe, Petra, Lena and Inessa for taking time and going through parts of these pages with very critical eyes!

Frederikke, Llouwella, Willelm and Ugo – thank you for putting everything into perspective for me. This one is for you.

OVERVIEW OF CO-AUTHORS

Dr. Dominic Lemken (Chapter 4)

Marketing of Food and Agricultural Products
Department of Agricultural Economics and Rural Development
University of Göttingen

Prof. Dr. Stephan G. H. Meyerding (Chapter 2)

Business Administration
Department of Nutrition and Home Economics
HAW Hamburg

Prof. Dr. Rodolfo M. Nayga Jr. (Chapter 4)

Department of Agricultural Economics
Texas A&M University

Dr. Anette Ruml (Chapter 5)

Institute for Asian Studies
German Institute for Global and Area Studies (GIGA), Hamburg

Prof. Dr. Achim Spiller (Chapter 2 and 4)

Marketing of Food and Agricultural Products
Department of Agricultural Economics and Rural Development
University of Göttingen

Yixian Sun, Ph.D. (Chapter 3)

International Development
Department of Social and Policy Sciences
University of Bath

Dr. Liza von Grafenstein (Chapter 5)

Department of Agricultural Economics and Rural Development
University of Göttingen

TABLE OF CONTENTS

CHAPTER 1

1 GENERAL INTRODUCTION

The global food system and our consumption patterns cause a variety of negative externalities, including the production of greenhouse gas emissions (Garnett, 2011), the contribution to biodiversity loss (Dudley & Alexander, 2017) and nitrogen pollution (Stevens, 2019). Labour conditions and fair wages of farm workers are an issue – especially but not limited to the Global South. In contrast, it is livestock welfare which is commonly subjected to scrutiny by the public in the Global North. No single measure can solve the many problems along the global agri-food value chains. Instead synergies of measures addressing the supply and demand side are necessary (Springmann et al., 2018). Advances in technology are to be paired with shifts in dietary patterns, improvements in waste management, closing of yield gaps and so forth (West et al., 2014). Voluntary sustainability standards (VSS) are an increasingly popular tool to mitigate environmental and social externalities of agricultural production (Auld, 2014; Lernoud, Potts, & et al., 2015). They specify requirements that producers and other actors along the supply chain are required to meet, relating to a wide range of sustainability metrics (United Nations Forum on Sustainability Standards, 2013). VSS are used in supply chains to recognize, track and label products from environmentally and socially responsible practices. They are no panacea to achieve more sustainable food systems; effects certainly depend on the specifications of the certifications, the sector and situation on the ground (Meemken et al., 2021). Nevertheless, they are one leverage point to transform the system towards greater sustainability by supporting the diffusion of pro-environmental and prosocial standards via trade (UNCTAD, 2021). VSS requirements are closely connected to the Sustainable Development Goals, including zero hunger (Goal 2), decent work and economic growth (Goal 8) and responsible consumption and production (Goal 12) (Blankenbach, 2020).

Compared to most other leverage points, the majority of sustainability standards directly addresses the consumer via consumer-facing labels. These labels verify the credence attribute of a product and turn it into a search attribute which may or may not influence consumer choices. In the absence of a label, consumers cannot identify whether production processes of similar products differ according to environmental, social or animal welfare aspects. Hence, they cannot influence their decision-making process even if these production processes align with their preferences. When trust in the label is given, information asymmetries between consumer and producer are removed by the certification. Instead of sitting at the side-lines when policymakers propose changes, consumers are turned into agents who can express their preferences for more sustainable food systems via their choices in the supermarket. Thereby, the relevance of our daily consumption choices is strengthened while also being put under the spotlight.

1.1 PROBLEM STATEMENT & ASSUMPTIONS

The share of ethically certified arable land, crops and, consequently, products on the supermarket shelves are on the rise (Meier et al., 2020). Long established certifications expand and new ones emerge. Despite this growth, the total market share of ethically certified products remains generally low, but with notable variations between countries, products and certification types. One explanation for the low uptake by consumers despite their favourable assessments of such ethically certified products is the gap between intention and behaviour, also known as the divide between citizens and consumers or the vote-buy-gap (e.g. Lusk, 2018). Various factors, such as perceived lack of effectiveness, budget constraints, product availability and social desirability bias when voicing one's opinion have been identified as contributors to this gap. Concurrently, research has identified various factors that encourage more sustainable consumer behaviour, and by that, reducing the size of the gap (White, Habib, & Hardisty, 2019). The four individual studies of this thesis add to our understanding of the driving forces behind consumer preferences for food products with ethical certifications 1) by transferring the concept of the warm glow of giving to consumer research 2) by unpacking consumer support for differing specifications of standards 3) by analysing the role of information source and content in consumer valuation of ethical certifications and 4) by embedding resulting insights into the bigger picture of decision-making processes and the role of consumers as agents in the move towards more sustainable food systems.

As the focus of this work lies on consumer preferences for ethically certified food products and how demand of such can be increased, it is implied that an increase in the uptake of sustainability standards is generally advisable in order to improve social and environmental aspects in agricultural production. Thereby, this thesis builds on the assumption that VSS – in fact – improve conditions and practices in the agricultural sector. This assumption is simplified as empirical evidence on the effects of various sustainable certification schemes draws an heterogenous picture.

For instance, effects of VSS in the coffee sector in South America depend on the certification scheme: farmers' participation in Fairtrade-organic double certifications and the Rainforest Alliance certification scheme appear to be the most impactful in terms of economic, social and environmental sustainability (Dietz, Grabs, Chong, & Kilian, 2020). Farmers participating in other certification schemes show mostly no improvements as compared to uncertified farmers in respect to the indicators that measure aspects of sustainability (ibid). In Ghana, Fairtrade certified plantations result in higher hourly wages and increased job satisfaction (Krumbiegel, Maertens, & Wollni, 2018). In the Ivory Coast, Fairtrade certified farms increase living standards of household but not food security (Knößlsdorfer, Sellare, & Qaim, 2021). A systematic review and meta-analysis of the economic effects of VSS finds that certified farmers receive 20-30% higher prices and have a 16-22% higher household income; yet, due to large heterogenous effect sizes, the study concludes that not all farmers appear to benefit and that context matters (Meemken, 2020). Effects on health and the environment of sustainability certifications are difficult to assess as different mechanisms are at play (Sellare,

Meemken, & Qaim, 2020). With respect to the effects of VSS on trade, results are also not clear-cut: standards can be catalysts of trade, enhancing exports from the Global South to the North, e.g. in the case of the GLOBALG.A.P. business-to-business certification (Fiankor, Flachsbarth, Masood, & Brümmer, 2019). Standards can have enhancing and reducing effects simultaneously depending on the product, e.g. the case of UTZ certified cocoa (Grassnick & Brümmer, 2021). Standards can have no effect on exporting companies in the Global South (Schuster & Maertens, 2015). Differing variables, such as the characteristics of the exporting and importing country, the product type, the stringency of standards, may influence trade effects of VSS.

In sum, generalizable conclusions of the effects of VSS on producers, communities, the environment and trade are not possible due to the heterogeneity of VSS and varying conditions on the ground amongst other factors (Meemken et al., 2021). Even though, findings need to be seen within their boundaries of examined certification, study area, and measured outcome variables, the bottom line of VSS appears rather positive than negative.

On a more general level, consumer preferences for ethically certified products, here presented via consumer-facing VSS, are also seen as a proxy for responsible consumption patterns. For example, providing evidence that individuals include social and environmental aspects into their consumption decision (Lim, 2017), would allow for conclusions to be drawn surpassing the covered VSS.

1.2 BOUNDARIES: PRODUCTS, CERTIFICATIONS & MARKETS

We employ chocolate and tea in our empirical studies as products advertised with the Fairtrade, Rainforest Alliance, organic and climate-neutral label, or with descriptive sustainability standards. Therefore, this section briefly introduces social and environmental problems of tea and cocoa production, that give rise to the emergence and growth of sustainability standards in these areas.

1.2.1 SUSTAINABILITY CHALLENGES IN PRODUCTION & GROWTH OF VSS

Cocoa and tea production involve in parts similar social and environmental challenges that can be mitigated by more sustainable production processes required for certification. Human rights violations, such as child labour, are especially rampant in cocoa production. According to estimations by the International Labour Organisation (ILO), 70% out of the 260 million children affected by child labour in 2020 are involved in the agricultural sector, with cocoa production in West Africa as a well-documented hotspot (ILO, 2021). In Ghana and the Ivory Coast, the most relevant cocoa-exporting countries, 1.56 million children were involved in child labour in 2018/19 (NORC, 2020). The tea sector is characterized by a high prevalence of wages below the respective national minimum, lower pay for women who make up the

majority of the labour force in the tea sector, discrimination against selected groups, long working hours and often the failure to provide or use protective equipment (ILO, 2016, 2018, 2020).

Negative externalities are not limited to social aspects. Indeed, environmental impacts of cocoa production include deforestation and ecosystem degradation accompanied by resulting CO_2 emissions (Gockowski & Sonwa, 2011). Due to climatic requirements, cocoa production is constrained to equatorial regions with original tropical forest covers. Tropical forests sequester considerable amounts of carbon dioxide and are considered biodiversity hotspots (Wright, 2010). By logging tropical rainforests, extensive smallholder agriculture has become the driving force of ecosystem degradation in West Africa (Gockowski & Sonwa, 2011; Norris et al., 2010). To meet market demands and secure their income, cocoa farmers clear up more and more forest areas for cultivation (ibid). Additionally, the misuse of pesticides impairs soil fertility and ecosystem diversity, which in turn reduces farmland productivity and yields in the long run (Afrane & Ntiamoah, 2011). Similarly, tea cultivation is associated with the destruction of forests, erosion and negative effects on soil fertility due to monoculture production and the frequent application of agrochemicals (FAO, 2018; Prokop, 2018).

The most relevant sustainability standards for cocoa are UTZ, Fairtrade, Rainforest Alliance and organic, with large certified areas in West Africa and South America (see Figure 1-2). Large shares of tea growing areas in East Africa and South-East Asia are certified; Rainforest Alliance, organic, Fairtrade and UTZ being the most relevant standards in this context as well (see Figure 1-3).

Due to unsustainable production practices that go far beyond the cultivation of tea and cocoa, VSS have become a promising mode of regulatory governance in global food value chains over the last three decades. In the last decade especially, they have seen a rise in number and global coverage (Auld, 2014; Meier et al., 2020). The upward trend is apparent in the development of certified area in hectare (ha) for selected commodities (see Figure 1-1). Yet, for some commodities a flattening of the growth rate that even turned negative for cocoa, coffee and soybeans for the period 2018-19 can be observed. Cocoa boasts with 22.7% the largest certified share of its global area. Certified tea is grown on a substantially smaller area in ha, which translates to 14.4% of its global area (see Table 1-1). The vast majority of the total area of the selected commodities is certified as organic (> 71 million ha), 4.5 million ha are certified by Rainforest Alliance and 2.65 million by Fairtrade. Growth rates of various standards are partially substantial, but their share of global agricultural area is still marginal. Only organically certified area crosses the 1%-line (see Table 1-2). Despite their smaller area, Fairtrade and Rainforest Alliance certify large numbers of producers. This can be explained by their concentration on operations in the Global South where agriculture production is mostly dominated by smallholders, compared to the various organic schemes that certify producers both in the Global North and South (Meier et al., 2020).

Table 1-1. Key Indicators of Certified Commodities

Commodity	Minimum area certified [ha]	Share of global area	Area growth 2018/2019	Area growth 2015/2019
Bananas	353,445	6.86%	3.09%	21.50%
Cocoa	2,772,162	22.66%	-12.67%	53.19%
Coffee	1,789,026	16.09%	-18.52%	-31.51%
Cotton	6,545,498	16.78%	11.21%	99.88%
Oil palm	3,085,192	10.90%	7.72%	10.83%
Soybeans	1,840,465	1.53%	-5.96%	-27.88%
Sugarcane	2,550,414	9.52%	14.80%	123.70%
Tea	729,021	14.35%	8.09%	30.25%
Total (based on minimum)	19,665,224	7.90%	1.80%	30.90%
Total (based on maximum)	26,413,559	10.60%	2.70%	34.00%
Total (based on average)	**23,039,396**	**9.30%**	**2.30%**	**32.70%**

Fig. 1-1. Development of certified area harvested, min [ha]

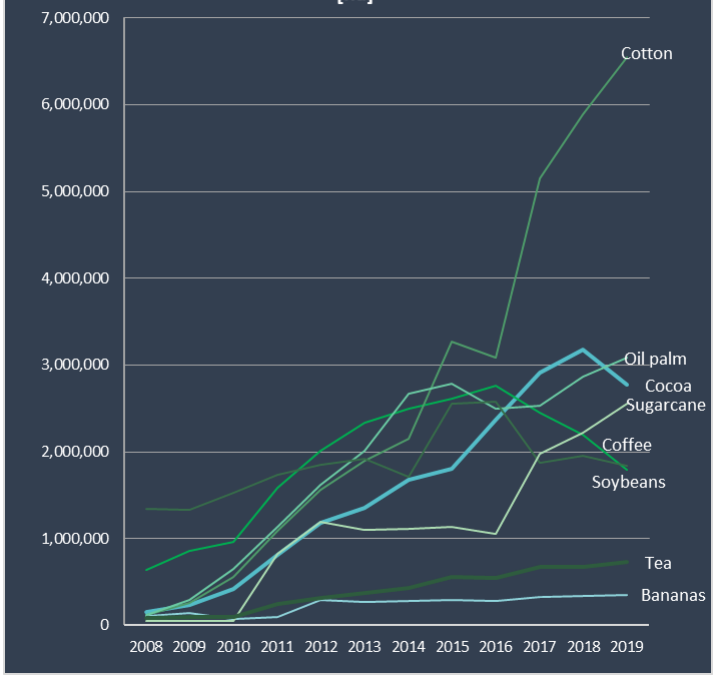


Fig. 1-2. Cocoa: Certified area harvested in 2019 [ha]

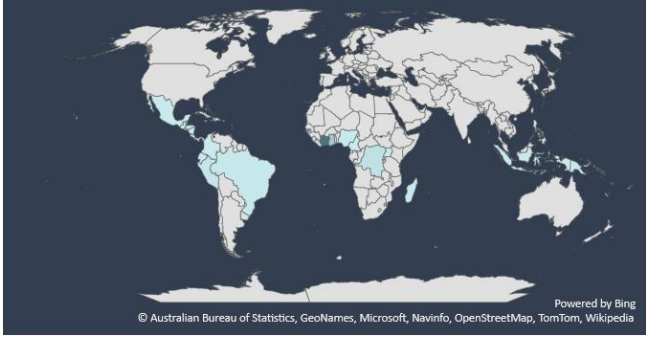
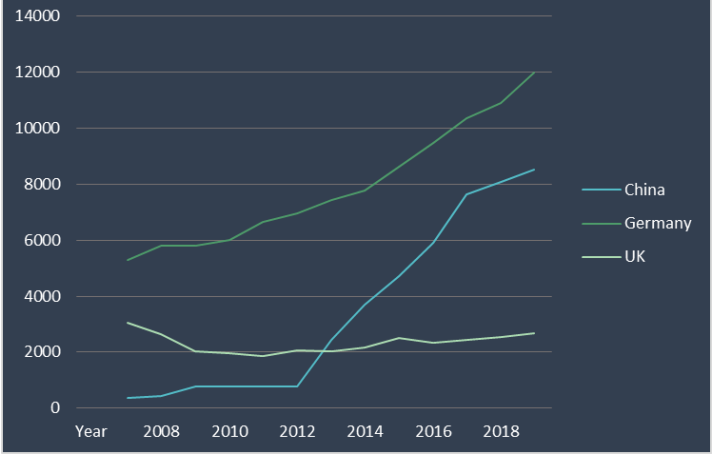


Fig. 1-3. Tea: Certified area harvests [in ha]

Table 1-2. Key Indicators of VSS

VSS	Area certified [ha]	Share of global agricultural area	Area growth 2018/2019	Area growth 2015/2019	Producers [no.]
Fairtrade	2,824,074	0.06%	6.40%	13.90%	1,716,245
Organic	72,138,583	1.52%	0.90%	7.00%	3,135,119
Rainforest Alliance	4,328,069	0.09%	-3.40%	49,40%	1,383,649
UTZ	3,349,656	0.07%	-13.40%	57.50%	1,101,485

Fig. 1-4. Development of organic retail sales [Million €]



Source: Own illustrations; Tables 1-1 and 1-2, Figures 1-1 to 1-3 based on data from FiBL, IISD, ITC, 2021 (www.standardsmap.org); Figure 1-4 based on data from FiBL, 2021 (https://statistics.fibl.org/data.html).

1.2.2 MARKET DIFFUSION OF CERTIFIED PRODUCTS

Parallel to the long-term growth in certified area, the number of products advertised with those certifications and their market shares have expanded, although to varying degrees.

In 2019, the global organic market reached 106.4 billion euros, with the US (44.7 billion euros), Germany (12 billion euros), France (11.3 billion euros) and China (8.5 billion euros) as the biggest markets (Willer, Travnicek, Meier, & Schlatter, 2021). Retail sales in the UK were at 2.7 billion euros in the same year. However, per capita consumption is the highest in Denmark (344 euros), Switzerland (338 euros) and Luxembourg (265 euros). Consumers in Germany spend on average 144 euros per year on organically produced food. The amount drops to 39 euros in the UK and 6 euros in China (ibid).

Despite a continuous growth globally, in 2015 Fairtrade products accounted for 1.7% of the total market in Switzerland and 1.5% in Sweden – representing the countries with the highest shares (Lernoud et al., 2017). Yet, the UK is the biggest market by retail sales, with 2.19 bn euros in 2015 (ibid). In 2020, consumers in Germany had a choice among 7,700 products featuring the Fairtrade label when shopping (TransFair, 2021). Products with the biggest market share were: roses (33%), bananas (17%) and cocoa (16%). Total sales of Fairtrade certified products are increasing since 2007 and reached 1.95 billion euros in 2020, despite a small dip due to the COVID-19 pandemic. Breaking the numbers down results in a yearly average amount of 23 euros spent on Fairtrade products per person in Germany (TransFair, 2021) and 34 euros in the UK (Lernoud et al., 2017). Data for China is not available.

Data on retail sales of Rainforest Alliance certified products is scarce. Following the Ethical Consumerism report in the UK (2021), retail sales of Rainforest Alliance products in the food and drink sector tripled between 2010 and 2020, from 1.20 million pounds to 3.57 million pounds. This growth might in parts be explained by the merger with UTZ in 2018[1], as UTZ certified products are not listed separately in the report.

A glimpse into these three specific markets suggests varying levels of diffusion of the sustainability standards at hand: Whereas organic is well-established in Germany and on the rise in China, the UK is the biggest market for Fairtrade products. Data on retail sales of products certified by the Rainforest Alliance label lacks completeness, but studies on label awareness in the EU show that it is not yet well-established compared to others (Annunziata, Mariani, & Vecchio, 2019; Grunert, Hieke, & Wills, 2014). Although we include a carbon-neutral label in study 1, this overview does not cover a carbon-neutral (or related) label as no uniform standard exists across countries that could be used as a basis for comparison.

There is a need to identify channels to increase the uptake of certified food products by consumers in each country, irrespective of varying levels of diffusion. Firstly, mismatches

[1] "Together Rainforest Alliance and UTZ will be a more powerful force for positive change", Jan 12 2018; https://www.reutersevents.com/sustainability/together-rainforest-alliance-and-utz-will-be-more-powerful-force-positive-change (last accessed on 22.02.2022).

between supply and demand occur, resulting in certified products being sold as conventional products disincentivizing an expansion of certification (Meier et al., 2020). Tea is especially affected because the main producing countries, like India and China, are also the main consumers and their demand for certified products is growing only slowly from a low level (Voora, Bermudez, & Larrea, 2019b). Secondly, the demand for cocoa is forecasted to increase in Asia (Voora, Bermudez, & Larrea, 2019a), rising the expectations of consumers to demand sustainably sourced cocoa. Thirdly, widespread businesses source cocoa and tea from countries that are known to have especially problematic production processes, e.g. Germany imports 60% of raw cocoa from the Ivory Coast, 15% from Nigeria, and 9% from Ghana (Association of German Confectionary Association, 2020). Therefore, protecting human rights and the environment during cocoa production is highly relevant for chocolate consumers in those countries. Lastly, policies on EU and national levels set sustainability targets that also require cooperation of consumers. The Farm to Fork Strategy of the EU aims to reach 25% of all agricultural area to be farmed organically by 2030.

Besides such policy goals, sustainability concerns are primarily driven by the demand side, putting the focus on consumer behaviour (Asioli, Aschemann-Witzel, & Nayga, 2020). Against this background, the following section summarizes the factors that are associated with sustainable consumption behaviour and aligned consumer preferences for ethically certified products.

1.3 CONSUMER PREFERENCES & THEIR DECISION-MAKING PROCESSES

The above sketched growth of VSS in the past decade has been matched by the growth of studies on ethical consumption behaviour. The majority of empirical studies focus on food products, organic standards and consumers in a single country, predominantly in the Global North (Bangsa & Schlegelmilch, 2020). This section provides an overview of factors that play a role in ethical consumption behaviour. Its structure is based on overarching themes that were identified in two recent reviews on sustainable consumer behaviour (Trudel, 2018; White et al., 2019). References are further made to the evolutionary bases for sustainable behaviour identified by Griskevicius and colleagues (2012). The overview of influencing factors is followed by a brief section on the decision-making process of consumers when grocery shopping.

1.3.1 WHAT DRIVES AND PREVENTS ETHICAL CONSUMPTION BEHAVIOR?

White et al. (2019) identify ‘individual self’, ‘social influence’, ‘tangibility’, ‘habit formation’ and ‘feelings and cognition’ as important factors that can either drive or prevent individuals to consume more ethically. Trudel (2018) identifies ‘the self’, ‘social influence’, ‘cognitive barriers’ and ‘product characteristics’ as the main themes. Similarities between classifications

are many and allow for a combination of both in order to create an overview of what matters in ethical consumption behaviour, without the aim of it being exhaustive.

'The (individual) self' summarizes individual characteristics that are correlated to ethical consumer preferences and choices. Considering its scope, a further segmentation into socioeconomic, unobserved psychographic characteristics and behavioural patterns is helpful. Especially in early sustainability research, it was of interest to identify the sustainable consumer with the focus on socioeconomic characteristics (Trudel, 2018). Studies find for instance correlations between intensive organic consumers and gender (female), income (higher) and education (good) (Hemmerling, Hamm, & Spiller, 2015). Fairtrade consumers tend to be women (Meyer-Höfer, Wense, & Spiller, 2015), tend to have higher income, be mature and single (Carrero, Redondo, & Fabra, 2016). More recently, studies have highlighted the importance of the younger generation as drivers for sustainable food consumption patterns (Jürkenbeck, Spiller, & Schulze, 2021; Schulze, Spiller, & Jürkenbeck, 2021). At the same time, findings show no consistent links between ethical purchases and socioeconomics (Panzone, Hilton, Sale, & Cohen, 2016; Tanner & Wölfing Kast, 2003). In terms of behavioural patterns, links between organic food consumption, low meat consumption, high fruit and vegetable consumption, a preference for whole grain, alcohol and tobacco abstinence (Hamm et al., 2012) and an active lifestyle (Goetzke & Spiller, 2014) exist.

However, a lot of research concentrates on psychographic differences of consumers. Values, personal norms, attitudes and consequentially self-identification as an ethical consumer and related concepts are at the core of this.

For instance, values that are mostly associated with positive attitudes of European consumers about organic food are security (safety, stability, harmony for society and oneself), universalism (the appreciation and protection of the welfare of people and nature), hedonism (pleasure and gratification for oneself) and benevolence (enhancing the welfare of people that are close) (Aertsens, Verbeke, Mondelaers, & van Huylenbroeck, 2009). Based on the concept of food values, consumers that value fairness and the environment are more likely to purchase organic food (Lusk & Briggeman, 2009). Universalism also plays a role for consumers in emerging markets when buying organic food (Thøgersen, Barcellos, Perin, & Zhou, 2015). The importance of the value system is found with regards to other sustainability aspects: It is value conscious consumers that show most interest and positive attitudes towards Fairtrade certified products (Doran, 2009; Ma & Lee, 2012; Pelsmacker, Janssens, & Mielants, 2005). Additionally, consumers with stronger social orientation tend to choose products with lower carbon footprint (Grebitus, Steiner, & Veeman, 2015) and evaluations of pork production systems are driven by participants' values rather than their attitudes (Sørensen, Barcellos, Olsen, Verbeke, & Scholderer, 2012). With respect to ethical consumption behaviour, values are of special interest, as they are more stable than other concepts, such as attitudes. These can help understand food choices in the long-run (Lusk & Briggeman, 2009). Yet, when diving deeper into the role of attitudes, nuances emerge as well. Govind et al. (2019) differentiate

between explicit and implicit attitudes and show implicit attitudes to be more stable and influential in ethical consumption choices than their explicit counterparts.

Values and attitudes build the foundation of individuals' self-concepts (van der Werff, Steg, & Keizer, 2013). If the self-concept of an individual involves the identification as an ethical consumer, they are more likely to consume ethically (Trudel, 2018). This action then serves a self-signal and validates the individual's moral standard and serves as a reminder of one's ethical self-image. This reminder can encourage ethical behaviour in the moment (Lades, 2014). The self-image can be further strengthened by repetitive behaviour that is in line with it (van der Werff, Steg, & Keizer, 2014). White et al. (2019) use the term of self-consistency to subsume these relationships to sustainable consumer behaviour.

Another important factor in consumption decisions is self-efficacy: *To what extent do I believe my own purchase of fairly traded chocolate will make a difference in the situation of smallholders somewhere else in the world?* For instance, Vermeier and Verbeke (2008) show that the lower the perceived self-efficacy the lower the attitude towards buying sustainable dairy products. Other studies find that self-efficacy explains intention to purchase sustainably better than other individual characteristics (Emekci, 2019; Hanss, Böhm, Doran, & Homburg, 2016).

Lastly, self-interest is to be mentioned within this category of 'the (individual) self'. To start with, the human tendency for genetic self-interest is basically a contradiction to sustainable behaviour at large, because in most cases it requires personal sacrifices to benefit a public good (Griskevicius et al., 2012). In order to overcome this contradiction, the focus is on the connection between personal benefits and sustainable behaviour (Marchand, Walker, & Cooper, 2010). This includes research on the effects of messages that communicate personal benefits of social and pro-environmental behaviour. In respect to charitable giving, communicating the pursuit of a personal goal as opposed to a collective goal results in larger donations in wealthy participants (Whillans, Caruso, & Dunn, 2017). In respect to pro-environmental activities, communicating personal benefits results in positive effects on engagement in self-interested and altruistic participants (Dominicis, Schultz, & Bonaiuto, 2017).

It stands noted that identified concepts regarding 'the (individual) self' may have adverse effects on sustainable behaviour as well. When a sustainable consumption choice boosts the individual's self-image, they might feel less inclined to repeat the ethical choice in a different situation or pay less attention to other ethically important attributes (Engel & Szech, 2020). Self-interested appeals can also lead to the crowding-out of intrinsic motivations of consumers and disincentive the sustainable purchase (Edinger-Schons, Sipilä, Sen, Mende, & Wieseke, 2018).

'Social influence' considers how the behaviour of others influences individual behaviour. It is grounded in humans' general inclination to copy others unconsciously, which originally is a strategy to learn (Griskevicius et al., 2012). White et al. (2019) gather much evidence of how

social norms affect pro-environmental behaviour on the individual level and that descriptive norms (*"90% of households in this community recycle."*) are more effective than injunctive norms (*"Everybody in this community must recycle!"*). This is especially because the latter can lead to reactance. Social influence is often part of existing theories that are applied in sustainability research (Turaga, Howarth, & Borsuk, 2010). For instance, the Theory of Planned Behaviour combines social influence via social norms, the individual self via attitude, and perceived behavioural control in order to explain intention. Behaviour, then, is directly influenced by intention, but also by perceived behavioural control (Ajzen, 1991). The Theory of Planned Behaviour is frequently applied to understand how ethical consumer behaviour is formed (Carrington, Neville, & Whitwell, 2014; O'Connor, Sims, & White, 2017; Rimkus, 2014; Vermeir & Verbeke, 2008; Yin, Wu, Du, & Chen, 2010). In the process, it has been expanded to take into account various other factors such as trust (Tung, Shih, Wei, & Chen, 2012) or the aforementioned self-efficacy and values (Vermeir & Verbeke, 2008) to improve the understanding of intention and behaviour.

Moreover, social influence comes into play via social identities and social desirability (White et al., 2019). Both follow a similar logic as self-image and self-signalling but require others as reference points. Belonging to a group that is engaged in sustainable actions can be encouraging to do likewise (ibid). Social desirability refers to sustainable actions that are performed in order to make favourable impressions on others. Social desirability as a driver for consuming ethically ideally requires for choices to be made in public and these to be observable (Green & Peloza, 2014). Griskevicius et al. (2010) summarize their similar findings under the caption *"going green to be seen"*. Following this line of thought and empirical evidence, the public purchase or possession of ethically sourced products can be categorized as conspicous consumption. Instead of showing off one's wealth, one shows off one's moral concern. The idea of the ethical Veblen effect is explored theoretically (Stiefenhofer & Zhang, 2022).

'Cognitive barriers', coined 'tangibility' by White et al. (2019), refer to the inherent nature of sustainability issues that are at odds with the inherent cognitive barriers of humans (Griskevicius et al., 2012). The benefits of pro-environmental and prosocial purchases are not immediate and are also often intangible. They can be hard to measure, as their overall effects on the environment or society might be uncertain and for the consumer hard to track. Sustainability issues require a long-term perspective, but are met by individuals that are mostly present-biased and prefer to receive benefits today rather than tomorrow (Griskevicius et al., 2012; Thaler & Shefrin, 1981). This mismatch is on the one hand linked to unobserved individual characteristics (cf. 'the (individual) self'). For instance, a study reveals that future-oriented consumers are more likely to purchase organic options (Marchi, Caputo, Nayga, & Banterle, 2016). On the other hand, this mismatch can be mitigated by activating a long-term perspective in consumers to increase pro-environmental concern and behaviour (Arnocky, Milfont, & Nicol, 2013). Hence, cognitive barriers do not just exist, but can be reduced.

Thereby, the intangibility of sustainable consumption behaviour can be made more concrete and also more relevant to the consumer themselves (see White et al., 2019 for examples).

Overall, cognitive barriers are embedded in the wide scope of research on behavioural biases, i.e. preferences, beliefs and decision-making that deviate from the standard economic model (Rabin, 2002). According to a conceptual framework and review of biases in consumption by Dowling et al. (2020), it is especially the pre-purchase and purchase phase that is affected by nonstandard preferences, beliefs and decision-making. How these biases can be overcome or even employed to boost sustainable consumption is discussed below.

'Habit formation' captures the difficulty of repeated and continuous sustainability actions (e.g. recycling or grocery shopping) as opposed to one-time actions (e.g. installation of a heat pump) (White et al., 2019). Here, the research focus lies on how consumers can make these choices easier for themselves and how they can be assisted in doing so. One option is turning small repetitive actions into one bigger more deliberate action. An example of this is signing up for an organic box scheme, which not only transforms many small decisions into a single one but simultaneously serves as a commitment device (Torma, Aschemann-Witzel, & Thøgersen, 2018). Another option is the forming of so-called implementation intentions. A step from intention to implementation intention needs to be taken which involves making a mental plan or map of the specific purchase. In very practical terms, these can take the form of a shopping list or planning a stop at a specific supermarket when running errands (Carrington et al., 2014). Consumers that were given vivid cues on how and when to use a sustainable shopping guide (booklet), shifted their actual purchase behaviour towards sustainable products in the week after receiving the cues (Fennis, Adriaanse, Stroebe, & Pol, 2011). A meta-analysis of empirical studies supports the link between implementation intention and reaching a goal in different spheres of life (Gollwitzer & Sheeran, 2006).

The formation of habit as well as the reduction of cognitive barriers can be assisted via different aspects of choice architecture. One example is the setting of the sustainable choice as the default with the option to opt-out. Empirically, defaults have resulted in an increased uptake of vegetarian lunches (Hansen, Schilling, & Malthesen, 2021) and an increased uptake of healthier breakfast options by parents for their children (Loeb et al., 2017). Other examples are nudges via messages and prompts at the point-of-sale, or incentives via discounts, tiered pricing and rebates (see White et al., 2019 for examples). The overall aim of adjustments in the choice architecture is to make the intended behaviour of individuals easier to execute. The need for this assistance is also rooted in the decision-making process of individuals, which has been touched on with respect to cognitive barriers but will be discussed more in detail when considering contributions of this thesis in section 1.4.

Similarly, influencing factors subsumed under **'feeling and cognition'** by White and colleagues (2019) is tied to the decision-making process of individuals. *To what degree are decisions whether or not to choose the ethical alternative driven by affect or information, and in extension, how best to frame messages to increase their uptake?* Presenting information per

se affects consumers' valuation or behaviour regarding food in general (Gifford & Bernard, 2011) and food with sustainability features in particular (Bullock, Johnson, & Southwell, 2017; Chrysochou & Grunert, 2014; d'Astous & Mathieu, 2008). For example, the WTP for fairly traded labelled products increased after brief and even more, after more elaborate information (Disdier & Marette, 2012). Information provision also increased the WTP for a child-labour free logo (Luckstead, Snell, Nalley, Nayga, & Sarpaning, 2021). Nevertheless, evidence of information affecting consumers purchasing behaviours is mixed: Andorfer and Liebe (2015) find no effect of information on purchases of fairly traded coffee in their field experiment. Further, and in connection to cognitive barriers, our capacities to process given information is limited which raises the issue of information overload (Miller, 1956). Considering that consumer-facing VSS are themselves information disclosure, information overload is often seen as a threat to their effectiveness (Horne, 2009; Moon, Costello, & Koo, 2017; Yokessa & Marette, 2019). This is particularly pronounced in combination with situational constraints when doing grocery shopping (Ní Choisdealbha & Lunn, 2020) and the (partly) sheer number of labels and other information on the product's packaging. The latter is connected to consumer confusion which can be based on low knowledge of the existing sustainability labels in the market (Grunert et al., 2014).

Simultaneously, affect plays a role in ethical purchase decision of consumers. Insights from research on charitable giving show that (positive and negative) emotional appeals increase prosocial spending irrespective of the participants' predisposition (Goenka & van Osselaer, 2019; Small & Verrochi, 2009). Peloza et al. (2013) show that anticipated guilt can positively influence sustainable consumption choices via self-accountability (cf. 'the (individual) self'). Pride as an ego-centred moral emotion affects the intention to purchase sustainably produced T-Shirts in the US (Kim & Johnson, 2013) and is correlated to the intention to buy Fairtrade certified products (Ladhari & Tchetgna, 2017). Optimism affects the intention to reduce the use of disposable plastic bottles conditional on the respondent's stage of change (Peter & Honea, 2012). Emotional messages can increase the attitude towards a pro-environmental brand (Matthes, Wonneberger, & Schmuck, 2014). Yet, research suggests that the role of emotion in sustainable consumption decisions may be product-specific, e.g. effects of guilt reduction are bigger if the product itself is hedonic, like chocolate, and not utilitarian, like detergent (Guerreiro, Rita, & Trigueiros, 2015).

Lastly, only Trudel (2018) includes the category of **'product characteristics'** in their review. It covers the characteristics of the sustainable product and how they influence consumer choice. For instance, consumers perceive a trade-off between the sustainable value of a product and its hedonic and utilitarian values. Consumers are found to be more willing to trade-off the hedonic value than the utilitarian value of a product for more sustainability (Luchs & Kumar, 2017). Ethically labelled chocolate can be perceived of higher sensory quality by consumers (Silva, Bioto, Efraim, & Queiroz, 2017). However, Delmas and Grant (2013) find the opposite effect for wine. Yet, for the purpose of this overview, the focus of the category is shifted

towards the characteristics of the sustainability standard itself in order to summarize research findings on VSS features that matter to consumers.

VSS differ in their sustainability focus as the development of standards in section 1.2 illustrates. Several studies are designed to identify consumer preferences when they are faced with trade-offs between products advertised with different ethical standards. Concentrating on the VSS of interest to this thesis, studies find that US consumers value USDA organic over Rainforest Alliance and Fairtrade labelled coffee (van Loo et al., 2015). In contrast Loureiro and Lotade (2005) show that US consumers prioritize Fairtrade and shade-grown labelled coffee over the organic one. In an experimental auction, Vecchio and Annunziata (2015) find the highest WTP of consumers for chocolate advertised with the Fairtrade certification, followed by the Rainforest Alliance certification. A carbon footprint certification resulted in the lowest WTP. When comparing coffee and tea standards in Germany using scanner data, Bissinger and Leufkens (2017) find consumers are willing to accept a higher price premium for Fairtrade labels compared to organic labels, and this effect is bigger for tea than for coffee.

On a more general level, VSS can be differentiated by the type of benefit their sustainability focus creates, either public, private or both (mixed) benefits. Based on actual purchase behaviour and only accounting for labelled purchases, Sarti et al. (2018) cluster consumers in Italy. They find that the biggest group of consumers are indifferent, with only 3.6% of their purchased products labelled, followed by individualists that favour products with labels with mixed and private benefits (10% of total purchase). Collectivists make up the smallest group. 27.5% of their purchases are labelled and even though the share of labels with mixed and private benefits are high, their shopping baskets also feature comparatively larger shares of labelled products with purely public benefits.

Another source of differentiation is the design of labels. Products may feature positive binary labels (e.g. Fairtrade, organic, Rainforest Alliance). Thereby, products are either in line with this ethical aspect or not. Others feature labels with a quantitative information. The carbon footprint label initiated by Tesco featured the amount of CO_2 emitted during production. Products may also feature multi-level labels indicating an ordinal rating of the respective sustainability claim (e.g. the NutriScore). A combination of a multi-level label with quantitative information exists as well (e.g. Eaternity Score [2]). Each design offers advantages and disadvantages to consumers and producers (Lemken, Zühlsdorf, & Spiller, 2021; Taufique et al., 2022). Weinrich and Spiller (2016) argue that binary labels are often not suitable to reflect heterogeneity in production processes sufficiently and show that a multi-level animal welfare standard is able to reach higher market shares than a binary counterpart. The higher effectiveness of multi-level labels is supported for electronic products with environmental claims (Dessart, Marandola, Hille, & Thøgersen, 2021). Potter et al. (2021) find that a combination of multi-level label and information is affecting consumer choice the most. The latter is supported by the argument that in the case of multiple levels, producers are only

[2] https://eaternity.org/label/ (last accessed on 11 March 2022)

incentivized to improve to the point of crossing the threshold to the adjacent level. Adding quantitative information could be an incentive for further improvement (Lemken et al., 2021; Taufique et al., 2022).

VSS can also differ in their source and certification body. Past research indicates that consumers' willingness to buy sustainable products depends on the extent to which they perceive the relevant standard is credible and trustful (Ricci, Banterle, & Stranieri, 2018). It is expected that this trust is closely connected to the source of the VSS including who creates and implements the standard. For instance, research on aquaculture products shows that consumers in Vietnam derive most utility from private international standards with independent certification bodies, such as the Aquaculture Stewardship Council and GLOBALG.A.P. They do not, however, derive utility from a label that is provided by the Vietnamese government and is first-party certified (Xuan, 2021). Consumers in the UK trust the government and environmental NGOs to provide credible information, but business-sponsored eco-labels would need to be third-party certified in order to be trustworthy (Darnall, Ji, & Vázquez-Brust, 2018). In contrast, a study in the US finds that the label source is only important with fast-moving consumer goods, like milk, with corporate labels resulting into more positive attitudes (Atkinson & Rosenthal, 2014).

However, studies have yet to show consistent patterns on the standard features that attract consumers the most, though this is likely to differ between markets as discussed findings suggest.

1.3.2 HOW DO CONSUMERS MAKE CHOICES IN THE SUPERMARKET?

When consumers are confronted with multiple purchasing options in a supermarket, we know that their decisions about what enters the shopping cart or not, are usually made fast, partly impulsively and are based on routine (Hoyer, 1984). We also know that many external and internal factors play a role at that very point in time. Special offers, the placement of the product and how the aisles are arranged might matter (Inman, Winer, & Ferraro, 2009) but also our mood or if we are hungry (Nederkoorn, Guerrieri, Havermans, Roefs, & Jansen, 2009). We might also change our mind. We go shopping planning to buy X because it is in line with what we believe in but end up buying Y, because it is cheaper, X was unavailable or other reasons. As mentioned above, this phenomenon is labelled as the intention-behaviour gap and is well-documented (Auger & Devinney, 2007; Johnston, 2008; Lusk, 2018) especially when looking at food items with ethical claims, such as organic (Aschemann-Witzel & Niebuhr Aagaard, 2014; Frostling-Henningsson, Hedbom, & Wilandh, 2014; Moser, 2016), pro-environmental (Grimmer & Miles, 2017) or animal welfare (Vigors, 2018). Explanations for the gap are plentiful; starting from socially desirable answering behaviour in questionnaires, perceived and unperceived behavioural control issues, the lack of trust in the respective claim and the belief that one's own food choice does not lead to substantial change – as already highlighted as barriers of ethical consumption behaviour.

Self-control issues especially have been the focal point of many studies analysing behaviour at large that is incongruent with preferences (Thaler & Shefrin, 1981) and consumption behaviour specifically (Fennis et al., 2011). Both cases often cumulate into suggestions such as commitment devices or implementation intentions in order to follow through with one's good intentions (e.g. Torma et al., 2018).

These ideas and nudges are connected to the two-process theory of reasoning (Stanovich & West, 2000). System 1 of the two-process theory of reasoning is described to be quick, automated, intuitive, associative and highly contextualized. System 2 is described to be relatively slow, conscious, analytic, rule-based and decontextualized. It is especially System 1 that describes the decision-making process when grocery shopping. When shopping more than 2/3 of purchases involve at the point-of-sale decision-making (Inman et al., 2009). According to their study, the baseline probability of unplanned purchases is at .46, which can increase to .93 depending on contextual factors. This implies a high likelihood of impulsive purchase decisions. Contextual factors refer to the situational context when grocery shopping and entail everything that happens in the moment of purchase: an eye-catching promotion for a similar non-ethical product, the product placement in the store, receiving a recommendation by another customer and a like. The situational context can sway decisions either way (Carrington, Neville, & Whitwell, 2010). Having actual behavioural control as a consumer could swing the decision towards behaving in line with the intention, in other words, one would stick to the plan. It is defined as *"… the actual control the individuals have over their personal behaviour at the point of purchase and how this differs according to their own perceptions of behavioural control when they were formulating their purchase intentions."* (Carrington et al., 2010, p. 142). Actual behavioural control is therefore strongly situated in System 2 and is able to outweigh aforementioned biases, such as the present-bias. The situational context in the supermarket with all its influencing factors demand much self-control of consumers in order to implement their intentions.

These internal and external barriers to sustainable consumption choices suggest to apply mechanisms, like commitment devices and implementation intentions, to counterbalance System 1 and allow System 2 to kick in. Proposed message frames at the point-of-sale that communicate in concrete and tangible terms the effects of pro-environmental or prosocial behaviour point in the same direction (White et al., 2019). They serve as reminders of the long-term benefits of one's shopping choices that can be otherwise ignored by consumers with a high time-preference (Marchi et al., 2016). Thereby, reducing the cognitive biases consumers face with intertemporal choices. The assumption that the provision of information about a certification or a production process and its consequences leads to the increased uptake of certified products is also located in System 2, as the given information needs to be processed and acted upon. Most literature therefore locates sustainable consumption decisions in System 2 and sees the need to override System 1 in order to be successful (Trudel, 2018).

Lades (2014) takes a different path by exploring conceptually the option of nudging the purchase of ethical goods through impulsiveness. In some situations, System 1 can lead to immediate outcomes that we want, but eventual rewards that we dislike. In contrast, in System 2 wanting and liking are mostly congruent as it is a more deliberate decision-making process. Lades argues that the factors resulting to the wanting mechanism in System 1 can be utilized in order to create the wanting mechanism to consume ethically impulsively. Activating factors of the wanting mechanism in System 1 are deprived needs (e.g. hunger) that induces a mesolimbic activation that can be satisfied by immediate consumption. Usually based in biopsychology, Lades suggests theoretically, that the wanting mechanism can be activated via the self-image of an ethical consumer. In which case the deprived need is psychological. If an individual has a self-image as an ethical consumer, a reminder of this self-image can activate the wanting mechanism to satisfy this need and the individual acts accordingly. This mechanism of decision-making is also termed 'affect heuristic' and is, as explained, opposed to a more cognitively loaded mechanism (Czarnezki, Jönsson, & Kuh, 2018).

This overview of empirical evidence and theoretical thoughts on ethical consumer behaviour are the context that the research foci of this thesis are rooted in. The following section draws out the connections and contributions.

1.4 CONTRIBUTIONS OF THIS THESIS

The individual studies of this thesis contribute to the current knowledge about ethical consumer preferences and choices conceptually and empirically. On a conceptual level, the transfer of the warm glow – a personal benefit people receive when doing good – to ethical food choices and its potential as a nudge is the core. Additionally, the warm glow of giving is empirically captured in three of four studies (see Table 1-3) and therefore takes the centre stage of this section. The role of information in ethical consumer choices is analysed twice: once with respect to the characteristics of a certification (study 2: which VSS features matter to consumers?) and once via information treatments (study 4: do source and content of an informative message influence consumers?). Whereas the first part establishes links between various constructs and the valuation of VSS and gathers insights about consumer preferences in three markets (studies 1 and 2), the second part focusses on how the valuation of sustainability standards can be increased (studies 3 and 4). The emphasis lies on the mainstream ethical market and the average consumer.

Table 1-3. Study overview

Study	Title	Study type	Sample	VSS	Main analysis	Main outcome	Main focus	Decision-making process
1	Buy good, feel good? The influence of the warm glow of giving on the evaluation of food items with ethical claims in the UK and Germany	survey + choice experiment	N=1,000 (GER + UK)	Fairtrade, organic, carbon neutral	path analysis	part worth utilities + purchase intention	warm glow + individual differences (the self)	affect-driven
2	The many aspects of voluntary sustainability governance: Unpacking consumers' support for tea standards in China and the UK	survey + choice experiment	N=2,000 (China + UK)	standard features as text	OLS regression	part worth utilities	standard design + individual differences (the self)	information-driven
3	Warm glow and consumers' valuation of ethically certified products	RCT (message frames) + experimental auction	N=1,000 (GER)	Fairtrade, Rainforest Alliance	Tobit regression	willingness-to-pay	message frames + warm glow	affect-driven
4	Information source and content – drivers for consumers' valuation of fairly traded foods	RCT (information intervention) + survey	N=2,500 (GER)	Fairtrade	censored interval + OLS regression	willingness-to-pay + purchase intention	information source + information content	information-driven

1.4.1 THE ROLE OF THE WARM GLOW OF GIVING

The warm glow of giving is defined as a personal benefit people receive when doing good (Andreoni, 1990). It emerged in order to explain the mismatch between individuals doing good, e.g. giving to charity, and the idea that economic agents are only interested in the maximization of their utility. Based on this assumption and the absence of social preferences in standard economic models, public goods should be underfunded, as individuals have the incentive to use it without contributing, essentially to free-ride (Turaga et al., 2010). Besides benefiting from the public good, individuals gain utility in the form of the warm glow. The warm glow giver not only cares for the increase in utility for someone else when donating, they also increase their own utility. If someone else had made that donation, the increase in their own utility would not occur.

As the concept of the warm glow is also referred to as impure altruism, differences to pure altruism need to be pointed out. Altruism is defined as an action of sacrifice that is in consideration of the interest of others and without the need of ulterior motives (Nagel 1970 as cited in Andreoni, Harbaugh, & Vesterlund, 2010). Going back to the donation example: a pure altruist would be indifferent if someone else had made that donation as the outcome matters and they would not be driven by ulterior motives, like their own utility increase. Evidence for the existence of pure and impure altruists comes from public good games. For instance, government spending on a public good should crowd-out voluntary donations of participants by the amount of the government expenditure if participants are pure altruists. If they are impure altruists and therefore receive utility from the act of giving, voluntary donations will happen despite the government expenditure. Findings reveal an incomplete

crowding-out, suggesting the existence of warm glow givers (Andreoni, 1993). Neurological evidence further supports the distinction: A study using functional magnetic resonance imaging finds an increased activity in the mesolimbic reward system in the warm-glow condition (free choice of donation) as opposed to the purely altruistic condition (default donation) (Harbaugh, Mayr, & Burghart, 2007). The altruistic condition also resulted into an activity of the reward system albeit smaller (ibid). Despite the differentiation, Andreoni suggests that altruism and the warm glow are likely to be inextricably linked. In fact, warm glow and altruism are typically correlated with each other. In this respect, he poses the question if we can *"...use mechanisms that act on the warm glow to amplify altruism and overcome free-riding?"* (Andreoni et al., 2010, p. 11). An idea that is explored in studies 1 and 3 of this thesis.

From its origins in public good theory, empirical evidence has emerged showing that the warm glow is positively associated with blood donations (Ferguson et al. 2012) and the contribution to environmental public goods (Liebe, Preisendörfer, & Meyerhoff, 2011; Nunes & Schokkaert, 2003). Integrating the warm glow and altruism, a study finds the warm glow to be the main driver for pro-environmental behaviour, here green electricity usage and carbon-tax support (Hartmann, Eisend, Apaolaza, & D'Souza, 2017). The warm glow is further tied to low-cost pro-environmental behaviour (van der Linden, 2018) and positive attitudes towards cause-related marketing offers (Mimouni Chaabane & Parguel, 2016). Despite not applying the 'warm glow' label, qualitative research finds consumers to feel good about themselves when they buy Fairtrade (Davies & Gutsche, 2016).

Following Kotchen (2005), we enlist products with ethical certifications as impure public goods because an ethical certification reflects a contribution to a societal or environmental public good (e.g. social equity or biodiversity). The purchase of such is assumed to be linked to the warm glow feeling. Thus, the concept of the warm glow connects to the drivers and barriers of ethical consumption behaviour in the following ways. Firstly, it can be grouped with the other factors of 'the (individual) self' as an unobserved, psychographic characteristic that may differ on the individual level. More precisely, the warm glow aligns with the idea that self-interest can be a driver for more sustainable consumption, and thereby connecting to the literature that differentiates between employing private vs. public benefits in sustainability marketing and campaigns for social or pro-environmental behaviour (Dominicis et al., 2017; Green & Peloza, 2014). Personal benefits can be further distinguished between intrinsic and extrinsic benefits with the warm glow being intrinsic in nature as opposed to, for instance, extrinsic monetary benefits. Secondly, labelling the warm glow a feeling can be also understood within the category of 'feeling and cognition'. When operationalized, the warm glow compares best with the feeling of pride. A link between pride and ethical food choices has been established but research in respect to this specific emotion is limited (Antonetti & Maklan, 2014). The warm glow has also been connected to affective well-being when acting green (Welsch, Binder, & Blankenberg, 2021). Lastly, the personal reward received by experiencing the warm glow happens irrespective of the actions of others and is independent

of the outcome of the action. Henceforth, it is believed that the warm glow can overcome the earlier mentioned perceived lack of self-efficacy when choosing a product with an ethical certification as well as other cognitive barriers. In light of this, the potential of the warm glow in the decision-making process in combination with another of its characteristics needs to be discussed.

The warm glow of giving results in an increase in utility that occurs on the spot. This immediacy is confirmed by neurological studies that find an increased activity in the mesolimbic reward system when doing good (Harbaugh et al., 2007; Moll et al., 2006). Additionally, another study shows that after participants realize they behaved pro-environmentally, their temperature perception is affected – they feel warmer. The authors explain that the psychological state affects the thermal state and call their finding the "*literal warm glow*" (Taufik, Bolderdijk, & Steg, 2015, p. 37). The effect on the perceived thermal state happened immediately.

This instantaneous effect of the warm glow is of relevance for our decision-making process. First of all, it offers the potential to overcome the cognitive bias of an intertemporal choice. Benefits for the environment and/or society are still in the future, but the personal benefit due to the immediate activation of the mesolimbic reward system or, in economic terms, the immediate increase in utility, can overcome the required long-time perspective for sustainable consumer behaviour. The potential of the warm glow in this regard has been previously named as a research gap (White et al., 2019, p. 33). Moreover, it follows the proposal by Lades (2014) to explore the potential of System 1 to follow through with one's intention to purchase more ethically instead of the more common approach to concentrate on System 2 to counterbalance self-control issues. As referred to above, he employs the self-image of an ethical consumer to trigger the impulsive purchase of food items with ethical claims at the point-of-sale ('wanting') to act in line with this self-image ('liking'). The third study explores this notion empirically with the warm glow as a potential trigger to consume impulsively (for good). Thereby, the warm glow activation potentially serves as an affect heuristic, which reduces the mental costs associated with more deliberation when choosing actively (Sunstein & Reisch, 2014). Study 1 serves as a foundation for this experiment by establishing the required link between the warm glow and food products with consumer-facing VSS.

1.4.2 THE ROLE OF INFORMATION

From the perspective of dual-process of reasoning, the other two studies are based on the more deliberate decision-making process as they focus on the role of information in ethical consumer choices. The role of information provision is approached from two angles: Study 2 analyses how specific VSS features influence the choice of participants. Instead of being presented with labels, participants receive different standards as short text and each standard feature has multiple levels. Therefore, participants are faced with a more cognitive demanding task. This task is not comparable to a situation in a supermarket but aims at identifying the most valued VSS characteristics by consumers. The study connects best to the factors

subsumed under ‘product characteristics’ and extends its scope by integrating VSS features that are often neglected in consumer research, such as standard setter and standard origin, but are of importance when designing new standards or entering new markets with existing standards. Study 4 provides information about an ethical certification to participants. The information treatments differ in their source and in their content. Thereby, this study fits in the category of ‘feeling and cognition’, building on research that analyses the effect of information on consumers’ WTP. The added value lies in the emerging insights into *how* information should be communicated with attention to the role of information source and conveyed message.

The bottom line of all studies is to identify factors that can be employed in order to increase the uptake of VSS in different settings. By employing the concept of the warm glow, studies 1 and 3 explore the option of private benefits which are tied to other-benefiting behaviour in order to narrow the gap between the intention to purchase ethically produced food and the actual choice in the supermarket as well as to reach broader segments of consumers. By unpacking consumer support for different characteristics of VSS, study 3 identifies important features which need to be paid attention to at the design stage of VSS. Depending on the market, these need to be emphasized at the marketing stage to remain in line with consumer preferences. By taking a closer look at the effects of the source and the content of information about an already well-established ethical certification, study 4 provides insights about the limitations of information disclosure and opens the floor for concluding remarks on the role of consumers in achieving more ethically sound food value chains.

CHAPTER 2

2 BUY GOOD, FEEL GOOD? THE INFLUENCE OF THE WARM GLOW OF GIVING ON THE EVALUATION OF FOOD ITEMS WITH ETHICAL CLAIMS IN THE UK AND GERMANY[3]

Sarah Iweala, Achim Spiller, Stephan Meyerding

ABSTRACT

Food products with ethical claims are stacked on supermarket shelves in ever increasing numbers, but their share of total food sales does not usually climb above a one-digit figure. Numerous consumer studies have investigated the motives of consumers to purchase food items with ethical claims, as well as the potential purchase barriers. The presented study merges these insights with the concept of the warm glow of giving, which originates from public good theory, as we enlist food items with ethical claims as private goods with public good characteristics. The warm glow of giving reflects personal gain from an act of altruism. How the warm glow influences the intention to purchase food items with ethical claims, and the actual food choice, is the core question of this paper. Going into more depth, prosocial (Fairtrade) and pro-environmental (organic and carbon-neutral) claims are explored separately, and cross-cultural differences are pointed out. The empirical analysis is based on a representative consumer survey in the UK (n=452) and Germany (n=465) which incorporated a choice-based conjoint analysis. Both are mature markets for food items with ethical claims, yet with varying degrees of market penetration for prosocial and pro-environmental claims. Our results suggest a higher level of warm glow in the German sample, leading to a generally larger influence of the warm glow on the evaluation of ethical claims as compared to the UK. Overall, the Fairtrade claim is affected more positively by the warm glow than the pro-environmental claims, which can be explained by its stronger public good characteristic as compared to the organic claim and its perceived health benefits. Additionally, label awareness is a necessary precondition for any warm glow effect as the results of the carbon-neutral claim show. These findings are indicative for the use of the warm glow for marketing and social marketing strategies in order to increase the sales of food products with public good characteristics.

[3] This paper is published in similar form in the Journal of Cleaner Production: Iweala, S., Spiller, A., & Meyerding, S. (2019). Buy good, feel good? The influence of the warm glow of giving on the evaluation of food items with ethical claims in the UK and Germany. Journal of cleaner production, 215, 315-328; https://doi.org/10.1016/j.jclepro.2018.12.266

The contributions of each author are as follows: All authors conceptualized the research. Data was gathered and compiled by Sarah Iweala (SI). SI analyzed and interpreted the data. Achim Spiller (AS) and Stephan Meyerding (SM) assisted in the interpretation of results. The writing was done by SI. AS and SM provided invaluable feedback and comments at different stages of the research and drafting of the paper. All authors read and approved the final manuscript.

2.1 INTRODUCTION

Organic cherry tomatoes, fairly traded coffee beans, carbon-neutral chocolate bars, animal welfare pork chops – the list of food items with ethical claims is, even though not always everywhere available, long. Within the scope of this research, the focus lies on prosocial and pro-environmental claims. Both fall within the category of ethical consumption as *"…consumer behaviour where not only personal pleasures and values, as well as factors such as price and quality, but also ideas what is right and good for other people and the environment influence the motivation to buy."* (Lades, 2014, p. 122). Whereas prosocial claims focus on benefits for specific members of society, pro-environmental claims focus on the natural vegetation, soil, water and the climate. By the aforementioned definition, food items with ethical claims are enlisted as private goods with a public good characteristic; or: impure public goods (Kotchen, 2006; Lusk, Nilsson, & Foster, 2007). This classification provides the opportunity to apply public good theory in order to understand the motivation to purchase food items with ethical claims better. Thereby, the presented approach is an addition to existing theories to explain consumer motivation, intention and behaviour, but not an alternative.

The concept of interest is the warm glow of giving. It refers to a feeling people experience when performing an apparent altruistic act (Andreoni, 1990). In exchange for doing good, a hedonic reward is received. The warm glow has received much attention in the field of psychology and public and experimental economics. It is the relationship between the warm glow and prosocial behaviour, esp. donations, that is singled out and analysed the most (Andreoni, 1990; Crumpler & Grossman, 2008; Dunn, Aknin, & Norton, 2014; Kahneman & Knetsch, 1992; Karlan & Wood, 2017; Ottoni-Wilhelm, Vesterlund, & Xie, 2017). Evidence of the warm glow when making donations is also found in neuroscience. Based on functional magnetic resonance imaging (fMRI), a neural activity in the mesolimbic reward system of the brain is observed when donations are made (Harbaugh et al., 2007; Moll et al., 2006).

Only a few studies apply the concept to pro-environmental behaviour (Abbott, Nandeibam, & O'Shea, 2013; Hartmann et al., 2017; Menges, Schroeder, & Traub, 2005). Even less studies look into the relationship between food choices and the warm glow (Bennett & Blaney, 2003) – a research gap this study attempts to fill. How does the warm glow of giving affect the evaluation of food items with ethical claims? Are differences between a) prosocial and pro-environmental claims and b) countries observable?

The potential significance of the warm glow effect when choosing food items specifically, becomes even more relevant, when considering the results of the study by Evren and Minardi (2017). They demonstrate that warm glow givers receive more utility when they have a larger choice set to choose from: If they have the option to go for the selfish choice (e.g. a pure private good), their derived warm glow utility when choosing the "good" – or seemingly altruistic – choice is larger. Again, neuroscience confirms these claims as neural activity increases when people choose voluntarily to donate (Harbaugh et al., 2007). Especially when

grocery shopping, consumers are met with large choice sets on a daily basis – a situation when the warm glow effect could matter.

These findings and thoughts are reflected in our study design as respondents faced a choice experiment covering private and impure public goods. The results of their choices built the relevant endogenous variables that are utilized in a path analysis to test the influence of the warm glow. As the warm glow effect is to be embedded in existing theory, other concepts, such as purchase intention, values, future and global orientation, attitudes, socio-demographics, label awareness and knowledge, are tested as well.

The representative online sample consists of consumers in the UK and Germany. Those countries are of interest as both are mature markets for food items with ethical claims, yet with a varying degree regarding pro-environmental and prosocial claims. In 2017, The share of organic food products sales is with 5,1% higher in Germany than the 1.5% in the UK (FiBL & FOAM, 2019). In 2014, the largest market for Fairtrade products is the UK with almost US$ 2.8 billion in retail sales, comparing to US$ 1.1 billion in Germany (Lernoud et al., 2015). Moreover, studies have revealed different kinds of purchase motives. In terms of organic food, environmental protection is the most important reason for consumers in Germany. In the UK this motivation has been less pronounced in the past; health and taste aspects have priority (Baker, Thompson, Engelken, & Huntley, 2004), even though recent studies also highlight the importance of the environment in the UK (Hashem, Migliore, Schifani, Schimmenti, & Padel, 2018). Regarding prosocial claims differences in motivation persist (Varul, 2009).

The main findings of our paper are: a different level of warm glow in the German and UK sample, a larger warm glow effect on the evaluation of food items with prosocial claims than on pro-environmental claims, and the overriding factor of label awareness on the evaluation of the claim.

The outcomes are intended to give marketing strategists and policy advisors recommendations on when and when not to utilize the warm glow for their purposes, as the target population and the underlining claim are crucial.

2.2.1 THEORETICAL BACKGROUND: THE WARM GLOW OF GIVING, PUBLIC GOODS & IMPURE PUBLIC GOODS

In economics, Andreoni (1990) illustrated the concept of the warm glow theoretically by adjusting the standard public goods model by replacing the concept of pure altruism with impure altruism. Especially, when considering charitable giving, the impure altruism model provides a better reflection of patterns of giving; whereas the pure altruism model is a special case with limited explanatory power. In this respect, evidence of warm glow and/or altruism is found in the crowding-out effect (Ottoni-Wilhelm et al., 2017). If a donation is based on altruistic giving, a donor reduces her own contribution by the increase of public contribution

to the same cause. But if a donation is based on warm glow giving, a less-than-complete crowd-out of the donation is observed (Crumpler & Grossman, 2008). The individual driven by pure altruistic motives is indifferent about the source of the increased welfare of others. Their contribution to the cause can be purely substituted by the contribution of another individual. The individual driven by impure altruism (warm glow) receives a private benefit through the act of giving that cannot be substituted by the contribution of another individual.

Karlan and Wood (2017) embed the concept within Kahneman's system 1 and 2 of decision-making. Individuals motivated by the warm glow act within system 1 which is characterized by decisions based on intuition, impulsiveness and low effort, whereas individuals motivated by pure altruism act within system 2 which is characterized by reason, consciousness and high effort (see Kahneman, 2003 for more detail). Adding the philosophic point of view by Singer (2015) completes the picture. He describes warm glow givers as emotional altruists and juxtaposes these individuals to effective altruists who do the most good they can do with their donations. Therefore, effective altruists fall within system 2 of decision-making.

In recent research, Evren and Minardi (2017) develop a theoretical model that shows the preference of warm glow givers to have the option to be selfish when making a choice. By that, they are able to differentiate between people motivated by warm glow and people motivated by pure altruism, as the latter is indifferent about the choices at hand.

Kotchen (2005, 2006) develops a general model of environmentally friendly consumption which is based on the distinction between private and public good characteristics, and the assumption that those characteristics have substitutes in the market. Consumers have the choice between a pure private good (e.g. a bar of chocolate without any ethical claim) and/or a pure public good (e.g. a donation to an NGO working with small-scale farmers), or the impure public good (e.g. a bar of chocolate with a Fairtrade label). His model illustrates that the consumption of an impure public good can lead to the crowding-out of the contribution to pure public goods; unless the warm glow motive is strong enough, then direct donations would still be possible (Kotchen, 2006). Therefore, the warm glow of giving is beneficial in the private provision of (impure) public goods.

Analysing empirically the influence of the warm glow, Hartmann et al. (2017) investigate the different impact of pure altruism and warm glow on pro-environmental behaviour, namely the intention to sign up for a residential green electricity contract (impure public good) and support for a carbon emissions tax (pure public good). Their results suggest a significant relation of both concepts with pro-environmental behaviour, but if tested simultaneously the warm glow effect displaces the effect of altruism and explains additional variance in pro-environmental behaviour (Hartmann et al., 2017). Despite those insights, open questions remain: Does the warm glow affect consumers' choices when grocery shopping? Are cross-cultural differences existent? Does the warm glow effect differ between pro-environmental and prosocial claims?

2.2.2 ETHICAL CLAIMS AND WHY THEY MATTER TO CONSUMERS: WHAT WE KNOW

In our study we differentiate between prosocial and pro-environmental claims. The former focuses on benefits for specific members of society. Those can be members of society from a local perspective, such as fairer milk prices for German dairy farmers, or from a global perspective, such as fairer compensation for cocoa beans from small-scale farmers in the Ivory Coast. The Fairtrade label in our study represents the later. Environmental claims focus on benefits for the natural vegetation, soil, water, and the climate. Again, a local and global perspective is applicable. Whereas the potential benefits of the carbon-neutral claim in our study cannot be limited to one distinct place but profits the climate on a global scale, the organic claim affects the environment more localized. However, in our research the organic claim affects cocoa beans which are grown outside of Europe. From the viewpoint of the respondents this is rather representative of a global benefit. The organic claim is different to the carbon-neutral and Fairtrade claim, as many consumers connect additional health benefits with it (e.g. Hemmerling et al., 2015). Therefore, the choice is not entirely made on ethical grounds. This differentiation matters when analysing consumers' motives to purchase food items with prosocial and pro-environmental claims in more detail, and subsequently, when understanding the role of the warm glow of giving.

Behaviour is influenced by numerous variables. Focusing only on internal variables, Ajzen's Theory of Planned Behaviour (1991) highlights the importance of the intention to behave a certain way. Intentions are built on personal attitudes, social norm and perceived behavioural control. In turn, those find their source in different belief systems. Belief systems are people's values; they serve as a guiding system (Schwartz, 1992). People refer to them when evaluating the possible outcome of their behaviour; for example, when one decides which food item to add to their shopping cart. By that, values are more robust than attitudes and preferences.

Values that are associated the most with ethical behaviour are rooted in altruism. Those values, such as universalism and benevolence (Schwartz, 1992), have been linked to positive evaluations of pro-environmental (Aertsens et al., 2009; Grunert et al., 2014; Lusk et al., 2007; Sørensen et al., 2012; Thøgersen & Olander, 2006; Voon, Ngui, & Agrawal, 2011) and prosocial (Carrero et al., 2016; De Pelsmacker, Driese, & Rayp 2005; Doran, 2009; Ladhari & Tchetgna, 2017) claims alike. Values reflecting power and social status have mostly the opposite influence on prosocial (Doran, 2009; Ladhari & Tchetgna, 2017) and pro-environmental (Dreezens, Martijn, Tenbült, Kok, & Vries, 2005) claims.

Yet, studies have suggested that values might be a better indicator of attitudes and intention than of tangible behaviour due to various known and unknown barriers as well as a possible bias when measuring values, attitudes and intentions – giving rise to the so-called attitude-behaviour gap (Aschemann-Witzel & Niebuhr Aagaard, 2014; Auger & Devinney, 2007; Carrington et al., 2010; Grimmer & Miles, 2017). Multiple sources argue that positive attitudes often do not translate into actual purchase, leaving the ethical food market to remain a niche

market (Frostling-Henningsson et al., 2014; Johnston, 2008). In this respect, some studies on motives disclose that egoistic motives are a better indicator of pro-environmental purchases than altruistic motives or that egoistic motives generally are a good indicator of pro-environmental purchases (Chekima, Oswald, Wafa, & Chekima, 2017; Magnusson, Arvola, Hursti, Åberg, & Sjödén, 2003).

Egoistic motives that have been associated with the consumption of organic food are: health, food safety and superior taste (Hughner, McDonagh, Prothero, Shultz, & Stanton, 2007). It is especially the health motive which found reoccurring evidence in studies (Gassler, Meyer-Höfer, & Spiller, 2016; Hemmerling et al., 2015; Yin et al., 2010). Therefore, the organic choice is not fully fuelled by altruism, but also by hedonic motives. In addition to the difference in the nature of motives, differences among countries can be observed: in some country level studies altruistic motives involving protecting the environment and nature are not as relevant (e.g. Greece and the UK), as in other countries (e.g. Germany) (Aertsens et al., 2009; Baker et al., 2004). In the UK food safety and taste are important motivational factors to purchase organic food (Padel & Foster, 2005), but altruistic motives such as environmentalism exist as well, like recent research on organic box-schemes shows (Hashem et al., 2018). Regarding motives to purchase prosocial claims in both countries, mixed results emerge (Andorfer & Liebe, 2012; Varul, 2009). Based on the difference in the literature on motives in various countries and the aforementioned varying degree of market penetration of prosocial and pro-environmental claims in Germany and the UK, we postulate the following hypothesis:

H1: The effect of the warm glow of giving on the evaluation of food items with ethical claims differs in the German and UK sample.

Egoistic purchasing motives are not limited to pro-environmental – and here especially organic food items, they also play a role when purchasing food items with a prosocial claim, even though less research has been conducted in that field. Ladhari and Tchetgna show the influence of emotions on ethical consumption; concluding that *"…consumers who report high levels of intention of buying FT products express higher levels of pride, enthusiasm, satisfaction, happiness and joy compared with consumers who report moderate levels of intention of buying FT products."* (2017, p. 703) – an indication of the warm glow of giving.

In both cases hedonic motives are at play when intending to purchase food items with an ethical claim. The difference is that the hedonic motives at play are related to the private good characteristic of organic food items; while in the case of Fairtrade food items, the egoistic motives are rather related to the public good characteristic; leading us to the following hypothesis:

H2: Any warm glow effect is stronger for the evaluation of food items with the Fairtrade claim than for food items with the organic claim.

Regarding the carbon-neutral claim, expectations are different as possible hedonic health benefits are not linked to it. Studies exploring motives of consumers to purchase such are sparse. Existing research on carbon-neutral and carbon footprint labels are rather explorative in nature as respective labels are not consistent and widespread to date (Feucht & Zander, 2017; Gadema & Oglethorpe, 2011; Hartikainen, Roininen, Katajajuuri, & Pulkkinen, 2014; Lombardi, Berni, & Rocchi, 2017).

This importance of label awareness has found evidence in neuroscience research similar to the warm glow studies in this discipline. Studies using fMRI find increased activity in the ventral striatum, which functions as part of the reward system, as a response to organically labelled food (Fehse, Simmank, Gutyrchik, & Sztrókay-Gaul, 2017; Linder et al., 2010). This brain region is usually activated as a response to strong brands (Linder et al., 2010). The same study shows a positive correlation of a stronger activity in that region with a higher WTP for organic food. Therefore, labels awareness acts in a similar manner as strong brands.

Therefore, we postulate the following hypotheses:

H3a: In terms of environmental claims, the evaluation of the carbon-neutral claim is more influenced by the warm glow of giving than the organic claim.

H3b: The lack of awareness of the carbon-neutral claim outweighs the possible positive influence of the warm glow of giving.

The novelty of this study is due to two main reasons: Public good theory is borrowed to contribute insights to consumer choice behaviour in an empirical manner. The concept of warm glow is embedded in a set of numerous other variables in order to draw a more holistic picture of the factors influencing consumers stated and revealed preferences for ethical claims. Besides the aforesaid values and attitudes, also the psychological concept of future-orientation was included in the analysis (Marchi et al., 2016; Thaler & Shefrin, 1981).

2.3 MATERIAL & METHOD

In order to make assertions about consumers in general in the UK and Germany, a representative online survey was conducted in each country. Quotas for each sample were set to be representative of the population in terms of gender, age, education and income. The data was collected by a panel provider in the end of January 2018. After data cleaning, 465 respondents of the German sample and 452 of the UK sample were retained and used for analysis (Table 2-1).

Table 2-1. Socio - economic characteristics of sample (in %) compared to census data (in brackets)

	Germany		UK	
Gender				
Female	53	(51)	51	(51)
Male	47	(49)	49	(49)
Age groups				
16 - 24 years	11	(11)	10	(14)
25 - 39 years	21	(22)	27	(25)
40 - 64 years	42	(43)	41	(41)
65 years and above	26	(24)	22	(20)
Level of education				
No qualification	3	(4)	11	(9)
Lower secondary education	34	(35)	14	(12)
Upper secondary education	31	(31)	19	(18)
A-Level	13	(13)	19	(19)
University degree	18	(17)	37	(42)
Income groups*				
Low income	26	(26)	23	(19)
Middle income	40	(40)	31	(32)
High-middle income	27	(27)	38	(37)
High income	7	(7)	8	(12)

*low income = < 18.999£ (annually); < 1.300€ (monthly); middle income = 19.000 - 31.999£; 1.300 - 2.599€; high-middle income = 32.900-63.999£; 2.600 - 4.999€; high income = > 64.000£; > 5.000€.

As illustrated in Table 2-1, the German sample matches the population well, although women are slightly oversampled. The UK sample matches well in the middle sections of each quota, but is slightly biased towards lower income groups and the less educated; also, the youngest age group is slightly underrepresented.

Prior to the choice experiment respondents were filtered according to their chocolate consumption and whether they are responsible for grocery shopping in their household.

2.3.1 MEASURING THE EVALUATION OF FOOD ITEMS WITH ETHICAL CLAIMS: CHOICE EXPERIMENT & INTENTION TO PURCHASE

The survey is designed to measure the participants' evaluation of food items of ethical claims. This is done twofold: indirectly via a choice experiment and directly by using statement batteries assessing the intention to purchase food items with ethical claims.

A choice situation of consumers in the UK and Germany is simulated with a choice-based conjoint (CBC) experiment as it is advantageous when attempting to elicit consumer preferences for different attributes of a product (Lancaster, 1966). Consumers have to evaluate the product in its integrity. The preferences for the different attributes must be considered jointly – a reflection of a real-life purchasing situation. Importantly, as the choice experiment is used as a proxy for real-life purchasing behaviour, it is set right at the beginning of the survey. Respondents are not biased towards ethical or sustainable topics or their

corresponding labels. The attributes and their corresponding levels are summarized in Table 2-2.

Table 2-2. Attributes and their levels in choice experiment

Label	Origin of cocoa	Country of manufacture	Price
	Ghana	Belgium	0.60 £ / 0.70 €
	Ivory Coast	Germany	1.00 £ / 1.10 €
	Brazil	UK	1.40 £ / 1.50 €
none	Indonesia	US	1.80 £ / 1.90 €
	none	Ghana	2.20 £ / 2.30 €

* In addition to the E.U. organic label, in each survey the country specific label was added.

The product offered to the consumers is a 100-gramm bar of chocolate that differs in price, origin of cocoa, country of manufacture and ethical claim symbolized by the respective label. Price is split into five levels based on a priori market analysis for chocolate in both countries, and is only adjusted to the exchange rate. The different levels of the attribute origin of cocoa follows the list of top cocoa producers adding a minor geographical variation to cover all continents. The levels of country of manufacture is adapted from the main chocolate producing countries, namely Germany, USA, Belgium, and the UK. Additionally, the level 'made in Ghana' was added to observe if there is an effect on consumers' utility when the chocolate was produced in the Global South. The attribute regarding ethical claims consists of the Fairtrade label from FloCert, the EU organic label in combination with the corresponding national label (the German organic label and the Soil Association label in the UK), a carbon-neutral label and an option without any label.

Each consumer faces ten choice situations. Each situation has three randomized choice alternatives and a no purchase option, as shown in Figure A1 in the appendix. The experiment is prepared with Sawtooth Software 9.5.2 as a balanced, fully randomized choice design.

A possible hypothetical bias is mitigated by placing a cheap talk script before the choice experiment (Silva, Nayga, Campbell, & Park, 2011). The script asks respondents to choose as if they were in a supermarket taking their budget constraints into account. The awareness of a hypothetical bias is assumed to have risen as a result. The resulting part-worth utility for an ethical claim is representative for an (indirect) evaluation of the respective claim, and is used as a proxy for revealed preferences consequently.

The intention to purchase ethically is measured with six statements, two for each label. Using a 7-point Likert scale, respondents are asked to rate how true statements, such as *"When*

grocery shopping, I intend to purchase food products that were grown organically (if available).” are of them. A positive intention to purchase is representative for a (direct) positive evaluation of the ethical claim, and is used as the respondent’s stated preference.

2.3.2 CAPTURING MOTIVATING FACTORS: SCALE DEVELOPMENT

The aforementioned concepts that are usually associated with ethical consumption are captured via various statement batteries, which are separable into a meta-level of motivation and a specific level. The meta-level captures the personal human values of respondents, measured via the Portrait Values Questionnaire (PVQ-21) as developed by Schwartz et al. (2001), as well as respondents’ future orientation (Joireman, Balliet, Sprott, Spangenberg, & Schultz, 2008; Marchi et al., 2016) and global orientation. The concept of global orientation is developed based on the idea of future consideration, and constitutes a contribution by this study. It is based on the assumption that more globally oriented consumers are more inclined to evaluate the ethical alternative of a food item positively. The concepts at the meta-level do not refer to any ethical claim directly; they aim at assessing the value system and approach to life and its externalities. As a consequence, they are used as exogenous variables in the subsequent analysis.

The specific level of motivation targets the assessment of each ethical claim more directly. It measures the respondents’ agreement with the notion each label is based on (e.g. *“Organic agriculture is overall less harmful to our environment than conventional agriculture.”*), and to which extend they experience the warm glow of giving when acting in line with this notion (e.g. *“Participating in programs aiming at fair compensation for farmers/workers, makes me feel satisfied, giving something back to society.”*). Warm glow statements were adjusted from existing studies and, therefore, in line with the advice *“[t]o correctly assess and differentiate warm glow experiences with other emotional responses, the measurement items composing the scale should explicitly relate to the specific pro-environmental behaviour potentially evoking warm glow.*” (Hartmann et al., 2017, p. 47).

Additionally, the awareness and knowledge regarding each label is assessed. Label awareness is captured with one binary question, and knowledge with label specific quizzes.

2.3.3 ANALYSIS: PRINCIPAL COMPONENT ANALYSES, HIERARCHICAL BAYES & PATH ANALYSES

In the data analysis, part-worth utility, which results from the choice experiment, serves as a dependent (endogenous) variable, intention, attitude and warm glow as intermediary (intervening endogenous) variables, and the other motivating factors as independent (exogenous) variables only. From the socio-economic part, income and gender serve as independent (exogenous) variables, as well as label awareness and knowledge.

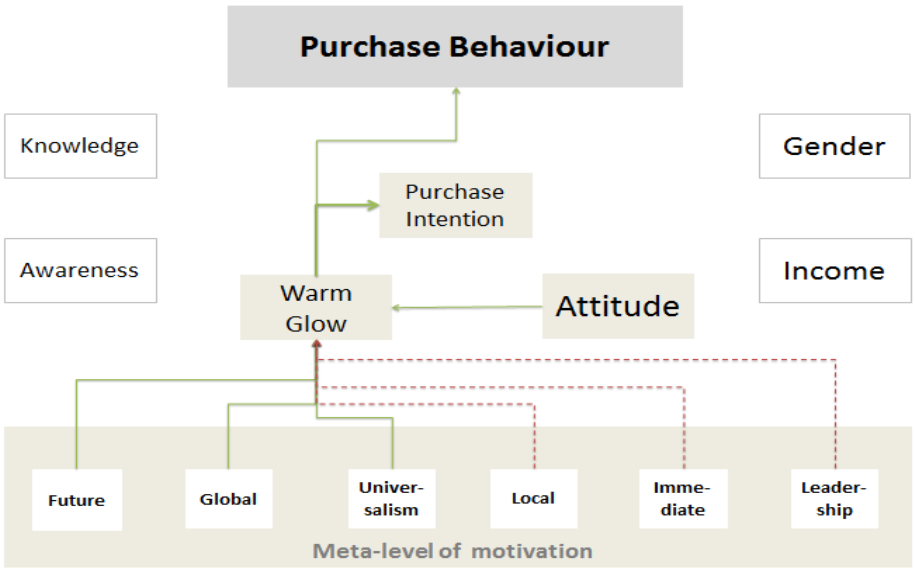
The analysis of the choice-based conjoint (CBC) experiment is based on the hierarchical Bayes multinomial logit model facilitated by Sawtooth. It is advantageous as it calculates part-worth utilities for each respondent (Meyerding & Merz, 2018). The individual part-worth utilities for each ethical claim are utilized as the endogenous variable in the path analyses.

To obtain the required variables from the questionnaire part, various principal component analyses (PCA) found application in order to narrow down the statement batteries to the core of each concept. Conducting principal component analyses achieves this reduction in dimensionality of the data set whilst retaining most of the variance Jolliffe, 2002). As a result, new variables are created: principal components. They are uncorrelated and preserve most of the variance (ibid). These principal components serve as explaining (exogenous) variables in further analysis, and in the case of purchase intention, attitude and warm glow as intervening endogenous variables.

Joining the results from the PCA and the CBC, a path analysis is performed to investigate which of the variables have a significant influence on the respondents' part-worth utility for the different ethical claims (revealed preference), as well as on their purchase intention (stated preference). The resulting path estimates are calculated by OLS regression. Additionally, it helps to identify the factors that are correlated with the warm glow of giving. Path analysis is advantageous because it decomposes the influence of an exogenous or intervening exogenous variable in indirect, direct and total effects. By that, we are able to see via which pathways variables have an effect on revealed and stated preferences. Overall, the path analysis is utilized to test if the multivariate set of data fits our causal model (Fig. 2-1) in both countries across three different ethical claims.

Besides Sawtooth Software 9.5.2, Stata 14 is used for the above-mentioned methods of analysis.

Figure 2-1. Conceptual model only showing pathways involving the warm glow of giving.



2.4 RESULTS

2.4.1 LABEL AWARENESS & KNOWLEDGE

Consumers in the UK are most familiar with the Fairtrade label, approaching total exposure of the label to the population. In Germany, the awareness is also high with 90.3% of participants indicating to have seen the label while shopping. Even higher is that percentage for the organic label, almost 97% of the German sample is aware of it; whereas only 41% in the UK sample indicate that they have seen the label while shopping. In both samples, the awareness of the climate-neutral label is below 20%. This is not unexpected as it is only used for a handful of products to date.

Label knowledge is represented by the mean score derived from the quiz for each label. The scores are reflective of the level of awareness. The more familiar consumers are with a label, the more they know about.

2.4.2 PART-WORTH UTILITIES IN COMPARISON

In addition to the usage of individual part-worth utilities as an exogenous variable in the path analyses, the average importance of attributes in Germany and the UK can be derived. They provide information about how much influence each attribute has on the overall utility of the product (Figure 2-2).

Figure 2-2. Average importance of attributes in Germany and the UK

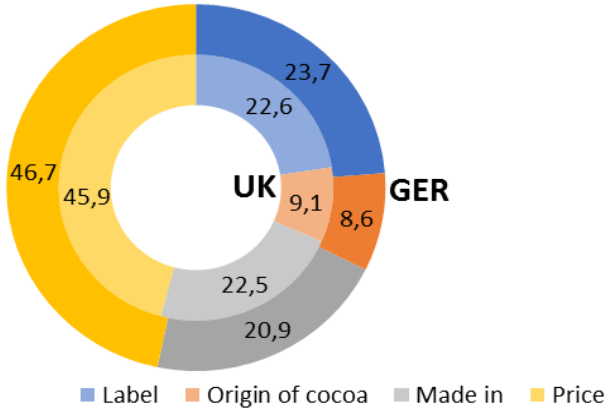


Figure 2-2 compares both samples; highlighting the similarity between the two countries. Price is the crucial factor when evaluating a chocolate bar, followed by – in similar strength – label and country where the chocolate was made in. The origin of cocoa plays a minor role in the total utility that consumers derive from purchasing a bar of chocolate. At this, it must be noted that the illustrated average importance of attributes only holds for this specific combination of attributes. The average utilities for each level of the four attributes offer a more detailed picture (Figure A2 in the appendix).

Our attention lies on the four levels of the attribute 'label'. The average utilities are – esp. in the UK – in line with awareness and knowledge of the corresponding labels. The almost universal awareness of the Fairtrade label is reflected in the comparatively high part-worth utility consumers derive from it, followed by the organic and the climate-neutral label. The same order holds true for the German sample; yet, with a comparatively lower part-wort utility for the Fairtrade label and higher part worth utility for the organic and climate-neutral label.

The larger importance of the Fairtrade label over the organic label when choosing chocolate is supportive of previous research (Rousseau, 2015). Both samples indicate that an ethical claim leads to a higher part-worth utility than no claim.

2.4.3 RESULTS OF PRINCIPAL COMPONENT ANALYSES

A principal component analysis of the items capturing the warm glow of giving exposes one warm glow component in both samples. All items load highly (above 0.7) on the component. According to Cronbach's alpha the items are internally highly consistent in both samples; implying an accurate measure of the warm glow based on the utilized items. The other necessary goodness of fit criteria are all fulfilled (see Table 2-3). Additionally, Table 2-3 illustrates a higher mean for each warm glow item in the German sample. A t-test reveals that this difference in means is statistically significant. This observed higher level of the warm glow in our representative German sample as compared to our UK sample is used in the interpretation of results.

Table 2-3. Results of principal component analysis of warm glow statements

	Germany Cronbach's alpha: .9289			**UK** Cronbach's alpha: .8887		
	Mean	SD	Factor loading	Mean	SD	Factor loading
Doing something about the environment gives me a pleasant feeling of personal satisfaction.	4.91	1.61	.8905	4.27	1.76	.7963
I am happy with myself whenever I make a contribution towards protecting the environment.	5.09	1.51	.8354	4.35	1.73	.7875
Doing something about social injustice gives me a pleasant feeling of personal satisfaction.	4.94	1.62	.8381	4.27	1.63	.7704
Participating in programs aiming at fair compensation for farmers/workers, makes me feel satisfied, giving something back to society.	4.54	1.69	.8230	4.19	1.59	.7805
Doing something about climate change gives me a pleasant feeling of personal satisfaction.	4.73	1.67	.8987	4.35	1.73	.8331
Reducing my carbon emission, I feel happy contributing to human well-being and the quality of the natural environment.	4.63	1.73	.8709	4.40	1.67	.8398

Note. Scale from 1 'not true of me at all ' to 7 'extremely true of me'. N=465 (GER) N=452 (UK)
Note 2. Kaiser-Meyer-Olkin measure of sampling adequacy: Warm Glow 0.8725 (GER), 0.7496 (UK)

All other concepts underwent the same procedure. The respective loadings and goodness of fit criteria are covered in Table A1 in the appendix.

A special note on the Schwartz' Human Values: contrary to the conventional way of analysing the PVQ, a different procedure is supplemented. Besides confirming the ten human values, we conducted an exploratory factor analysis, which revealed in both samples the same factor combining the values 'power' and 'achievement' – termed 'leadership' here after. Table 2-4 visualizes this factor. The values joined in 'leadership' represent status and are associated with negative views towards ethical consumption. Subsequent analysis shows a significant influence of this newly formed factor as opposed to utilizing the respective values separately.

Table 2-4. Results of principal component analysis of Schwartz' Human Values 'power' and 'achievement'

	Germany			UK		
	Cronbach's alpha: .7812			Cronbach's alpha: .7539		
	Mean	SD	Factor loading	Mean	SD	Factor loading
It is important to him/her to be rich. He/she wants to have a lot of money and expensive things.	3.02	1.68	.7377	3.46	1.81	.6931
It is important to him/her to get respect from others. He/she wants people to do what he/she says.	4.03	1.62	.7084	4.34	1.70	.7296
It is important to him/her to show his/her abilities. He/she wants people to admire what he/she does.	3.75	1.80	.8231	4.24	1.65	.7579
Being very successful is important to him/her. He/she hopes people will recognize his/her achievements.	3.87	1.78	.8326	3.97	1.85	.8499

Note. Scale from 1 'not true of me at all ' to 7 'extremely true of me'. N=465 (GER) N=452 (UK)
Note 2. Kaiser-Meyer-Olkin measure of sampling adequacy: 0.7718 (GER), 0.7448 (UK)

2.4.4 RESULTS OF PATH ANALYSES

The overall model fits the data well, as highlighted by the fit statistics applied for path analysis (Bentler, 1990; Hu & Bentler, 1999). Due to the application of the model on three different claims in two country samples each, those fit statistics are summarized in Table 2-5 for overview purposes. The overview indicates a slightly better fit of the model in the German sample. This observation is supported by the explained variance in each country sample; whereas the r^2 of the model in the German sample ranges from .67 to .71, the same model only produces a r^2 between .53 and .58 in the UK.

Table 2-5. Goodness of fit criteria of path analyses

	Germany			UK		
	Fairtrade	Organic	Climate-neutral	Fairtrade	Organic	Climate-neutral
r^2	.71	.67	.69	.58	.57	.53
Chi²	1.016.563	993.529	896.694	538.878	517.815	416.975
P-value	.594	.353	.284	.181	.185	.131
RMSE	.000	.000	.0018	.042	.041	.053
CFI	1.000	1.000	1.000	.998	.998	.997
TLI	1.034	1.034	.992	.927	.926	.841

Table 2-6 is a summary of Tables A2, A3, and A4 in the appendix. While they contain all significant path coefficients of each path analysis, Table 2-6 puts emphasis on the indirect and total effects of the warm glow component on the stated (purchase intention) and revealed preference (part-worth utility) for each claim.

Table 2-6. Effects of the warm glow on the purchase intention and part-worth utility of all claims in both countries

Path Coefficients Germany					**Path Coefficients UK**		
Total effects		**Indirect effects**		**...on... part-worth utility**	**Indirect effects**		**Total effects**
.151	**	.104	***		.010	**	
		.057	***		.007	**	
-.170	**	-.108	***		-.008	**	
				...on... purchase intention			
.417	***						.097 **
.332	***						.102 **
.424	***						.086 **

Note. Results are based on path analyses. Full results, including the effects of the other exogenous variables, are to be found in the appendix.

Comparing all three tables, it becomes apparent that the warm glow of giving has a relatively large positive total effect on purchase intention for all three ethical claims in the German sample (from b=.332 to b=.417). This influence is reduced to a beta weight of .151 of the warm glow on the part-worth utility for the Fairtrade label; although, it is the largest direct effect of the warm glow on any of the part-worth utilities. In respect of the organic part-worth utility, the warm glow only has an indirect effect via the purchase intention. In the case of the carbon-neutral label, the effect is direct and larger, but negative, which might be explained by the low awareness of the carbon-neutral label. The results from the German sample, initially, support our H2 (warm glow has a larger effect on the evaluation of the Fairtrade than the organic claim), yet the picture from the UK sample looks quite different. In the UK sample, the effect of the warm glow on purchase intention is lower; ranging from b=.086 to b=.102. This translates to only minor indirect effects on part-worth utility (see Table 2-6). Despite providing counter evidence to our H2, this low effect of the warm glow in the UK is supportive of H1 (the effect of the warm glow differs between countries). Instead of the warm glow, purchase intention is influenced directly by the attitude towards the respective cause (from b=. 118 to b=.279) and exogenous variables on the meta-level of motivation (see Tables A2, A3, A4). Only in the case of Fairtrade, all of those have a direct effect on the corresponding part-worth utility. Regarding the organic claim, only attitude (b=.187) and awareness (b=.192) have a significant positive influence, which is in line with the comparatively low awareness of the organic label in the UK sample. A similar observation can be made in terms of the part-worth utility of the carbon-neutral claim, which is only influenced by awareness (b=.156).

The motivational factors on the meta-level (values, global and future orientation) are modelled to be the source of the warm glow of giving, as well as income and gender, awareness and knowledge of, and attitude towards the respective label. In the German sample, especially, the value universalism (Fairtrade: b=.294) and global orientation (Fairtrade: b=.448) are correlated to the warm glow of giving, just as attitude (Fairtrade: b=.249; organic: b=.224; carbon-neutral: b=.174). Local orientation has a negative effect on the warm glow (Fairtrade: b=-.110). The factors of influence are different in the UK sample. Neither attitude (only for the carbon-neutral claim) nor universalism is significant. Global and future orientation adds to the feeling of warm glow, even though to a lesser extent than in the German sample. The factor 'leadership' has a negative influence (Fairtrade: b=-.105), just like being male (b=-.106) and present-biased (factor 'immediate') (b=-.201). Overall, the variance of the warm glow can be explained better in Germany than in the UK.

2.5 DISCUSSION

The aim of this study is to investigate the effect of the warm glow of giving on consumers' evaluation of food items with ethical claims, or in other words: impure altruism's effect on impure public goods.

In respect to our hypotheses, a mixed picture of results emerges. H1 is accepted: the warm glow of giving plays a different role in the German and UK sample. The difference in means of the warm glow items already provides a hint at this result. In the UK sample, the feeling of warm glow when contributing to the environment and society appears less pronounced than in the German sample. In the following path analyses, the influence of the warm glow on stated and revealed preferences is smaller across all ethical claims in the UK sample than in the German sample. A similar picture is drawn when analysing the correlation of the meta-level variables of motivation with the warm glow factor. When modelled as in our conceptual model in Figure 2-2, they are able to explain more variance in the warm glow factor in the German (r^2=.58) than in the UK sample (r^2 =.20). With the exception of future and global orientation, different variables are associated with the warm glow in both samples, which opens up the question, if there is a universal method to measure the warm glow or if it is dependent on cultural or social, maybe even historical, features of a society. More generally, our results suggest it would be advisable to apply marketing strategies that appeal to the feeling of warm glow of consumers in countries with documented higher levels of warm glow.

H2 (any warm glow effect is stronger for the evaluation of food items with the Fairtrade claim than for food items with the organic claim) can neither be rejected nor accepted. In both samples, the average part-worth utility of the Fairtrade label is the highest amongst all choices, but the variables influencing that evaluation – whether on the revealed or stated preferences – is very different. In the German sample, the evidence appears clear: the warm glow of giving has a stronger positive influence in the Fairtrade path analysis. Only in the Fairtrade scenario, the revealed preference (part-worth utility) is directly influenced by the warm glow of giving. In the other scenarios (Germany and UK), there is at most a minor indirect effect on the revealed preference (part-worth utility), but always a positive total effect on the stated preference (purchase intention) – although this effect differs in magnitude. Overall, this is indicative of a stronger influence of the warm glow of giving on prosocial claims; implying applicability for the promotion of Fairtrade food items specifically, and prosocial donations more generally. This observation is in line with the study associating emotions, esp. pride and joy, with prosocial behaviour (Ladhari & Tchetgna, 2017).

Appealing to the warm glow effect when marketing pro-environmental products should not be neglected either – despite the lower influence in our survey. The study by Hartmann et al. (2017) shows a positive influence of the warm glow on pro-environmental behaviour. When analysing the organic and carbon-neutral claim separately in the German sample, a small positive effect on the organic claim becomes apparent, whereas the effect on the carbon-neutral claim is larger but negative.

In terms of the climate-neutral claim, the lack of label awareness matters. According to our survey results, respondents experience a warm glow when doing something about climate change and intend to purchase products with low carbon footprint, but do not recognize the label as an indication of such. Therefore, purchase intention and warm glow have both a negative influence on the part-worth utility (or revealed preference) of the carbon-neutral

claim. Accordingly, H3b (the lack of awareness of the carbon-neutral claim outweighs the possible positive influence of the warm glow of giving) is accepted. If the label was well-known, the warm glow might have had a positive effect on its evaluation.

The importance of label awareness is further supported by the positive influence the awareness of the organic claim has on its part-worth utility. In both samples, the awareness has a direct effect on the revealed preference. In the UK, where awareness of the organic label is below 50% among participants, it is the largest single influence on the part-worth utility. This observation is in line with the neuroscience studies that compare the effect of a well-known label to the effect of strong brands on the neural reward system (Linder et al., 2010).

In turn, the low effect of the warm glow on the very well-known organic label might be explained by the health benefits associated with it. These might overshadow its public good characteristic. When consumers purchase organic food, the association is rather on private health benefits than on the environment. Supportive of this thought is the low effect of the value universalism, which is a measurement of altruism, on the organic part-worth utility (see Table A3 as compared to Table A2 in the appendix) – backing the assumption that the public good characteristic is stronger in the other ethical claims. Or in other words, when the hedonic motivation to purchase a food item with an ethical claim outweighs the altruistic motivation, the hedonic reward – the warm glow – from doing good is not given. Moreover, when looking at the choice situation our respondents faced once more, one can argue that when having the option among the Fairtrade, climate-neutral, organic and no-claim alternative, the organic claim is much closer to the selfish option (Evren & Minardi, 2017) than Fairtrade or climate-neutral thanks to its perceived health benefits (Hemmerling et al., 2015).

Additionally, the results indicate a disparity between the effects of the warm glow on stated and revealed preferences (see Table 2-5), with the former being influenced more. At first sight, this feeds the discussion about the intention-behaviour-gap (e.g. Carrington et al., 2014) and the argumentation that the warm glow is possibly just an inflation of one's WTP (Bennett & Blaney, 2003). Yet, when comparing it with the other exogenous and intervening endogenous variables, this disparity is put into context and, by that, reduced. In the UK sample, the effect of the warm glow on purchase intention (stated preference) is generally low, and is, therefore, not contributing to a possible intention-bias. In the German sample, the effect of the warm glow on purchase intention is larger, but this effect is partly past on, and becomes an indirect effect on the part-worth utility (revealed preference). This is in line with the observation that intentions can be generally a good predictor of behaviour, esp. when being fed by egoistic motives (Chekima et al., 2017).

2.6 CONCLUSION

The experience of the warm glow by consumers when purchasing food items with ethical claims should be taken into account when promoting these products. Even though the effect

on the evaluation (stated and revealed) differs according to ethical claim. Our study proposes a larger positive influence of the warm glow on products that feature a more well-defined / clearer / stronger public good characteristic, such as the Fairtrade label. Ethical claims that also provide personal benefits, such as the perceived health benefits when consuming organic food, are less suitable to induce a warm glow in consumers as the public good characteristic is being overshadowed by additional personal benefits. Ethical claims that are not well known are also less suitable to induce purchases based on the warm glow, such as the carbon-neutral claim. Consumers need to – at least tentatively – know what good they do with their purchase before the feeling of doing good can appear. This observation supports the importance of large-scale public awareness campaigns when introducing new labels in order to increase their effectiveness; such as the campaign of the German organic label (*Bio-Siegel*).

Possible differences among countries should be noted. Hence, an a priori assessment of the level of warm glow of the target population is advisable.

However, as the warm glow of giving has been mostly researched from the public good perspective, and only scarcely in the field of consumer behaviour, this study is explorative in nature and endeavoured to complement existing theoretical approaches in consumer studies with the warm glow effect. The results are, therefore, seen as initial insights in this field. Due to known shortcomings of self-reported behaviour in surveys, like social desirability bias (e.g. Padel & Foster, 2005), answers are always to be taken with a pinch of salt. Results cannot be translated one-to-one to reality. Having this in mind, we implemented given tools, like the cheap talk script, to mitigate any bias in answering behaviour by participants.

Future research would profit from comparing the effect of the warm glow on food products with ethical claims with pure public good characteristics (without the problem of label-unawareness and the noise of additional private benefits generated by the ethical claim), in order to support or reject the result of our research that the warm glow has a larger effect on prosocial claims.

2.7 APPENDIX

Figure A1. One out of ten choice situations each respondent faced (UK sample)

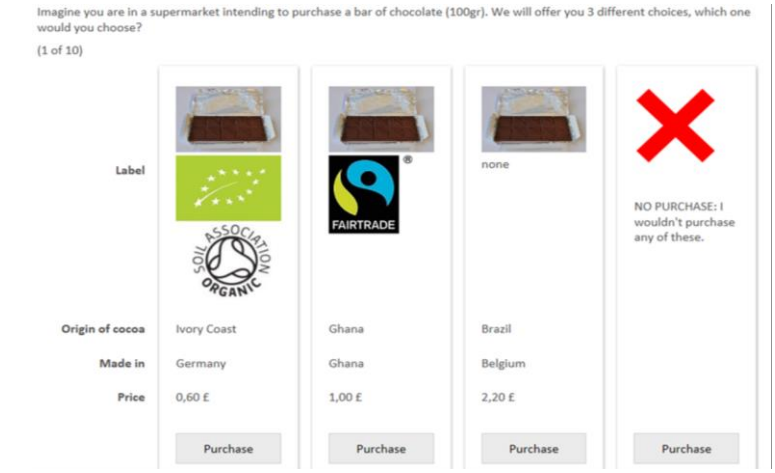


Figure A2. Average utilities of attributes in Germany and the UK

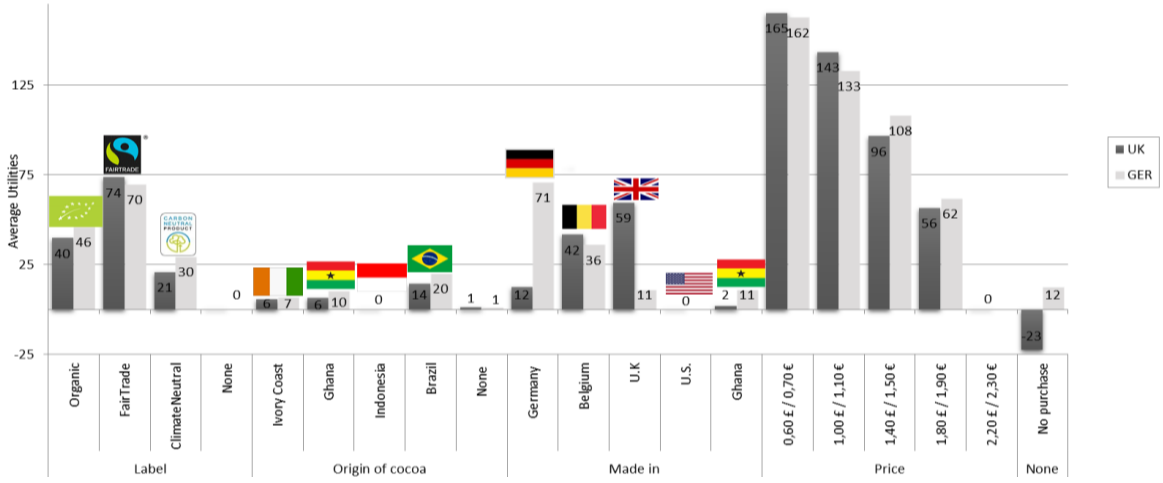


Table A1

Results of Principal Component Analysis of CFC Scale, CGC Scale, Attitude, and Purchase Intention.

	Germany			U.K.		
	Mean	SD	Factor loading	Mean	SD	Factor Loading
Consideration of Future Consequences (CFC) - Scale: Immediate	Cronbach's alpha: .7425			Cronbach's alpha: .8524		
I only act to satisfy immediate concerns, figuring the future will take care of itself.	3.29	1.69	0.7797	3.43	1.72	0.8288
I only act to satisfy immediate concerns, figuring that I will take care of future problems that may occur at a later date.	3.72	1.77	0.7538	3.53	1.64	0.8434
My behavior is only influenced by the immediate (i.e., a matter of day or weeks) outcomes of my actions.	3.51	1.75	0.7033	3.67	1.67	0.7952
I think that sacrificing now is usually unnecessary since future outcomes can be dealt with at a later time.	2.86	1.64	0.7301	3.46	1.70	0.7785
Consideration of Future Consequences (CFC) - Scale: Future	Cronbach's alpha: .7244			Cronbach's alpha: .7345		
I am willing to sacrifice my immediate happiness or well-being in order to achieve future outcomes.	4.91	1.68	0.6930	4.03	1.69	0.7517
I often engage in a particular behavior in order to achieve outcomes that may not result in many years.	4.68	1.62	0.7470	3.84	1.62	0.7344
My behavior is generally influenced by future consequences.	4.60	1.61	0.7834	4.15	1.56	0.7220
negative outcomes will not occur in many years.	5.40	1.63	0.7033	4.79	1.63	0.6843
Consideration of Global Consequences (CGC) - Scale: Global	Cronbach's alpha: .8179			Cronbach's alpha: .8024		
I consider how things are in other parts of the world, and try to influence those things with my day-to-day behavior.	4.45	1.59	0.8469	3.81	1.63	0.8322
When I make a decision, I think about how it might affect people in other countries.	4.06	1.78	0.7722	3.63	1.68	0.8136
My behavior is generally influenced by consequences that occur in different parts of the world.	4.24	1.70	0.7906	3.43	1.57	0.7933
I think it is important to take warnings about negative outcomes seriously, even if the negative outcomes do not affect my own surroundings.	5.01	1.67	0.7201	4.57	1.63	0.6485
Consideration of Global Consequences (CGC) - Scale: Local	Cronbach's alpha: .8227			Cronbach's alpha: .8043		
I only act to satisfy concerns that are spatially close to me, figuring the rest of the world will take care of itself.	3.01	1.66	0.8158	3.64	1.63	0.8067
My behavior is only influenced by the spatially close (i.e., my country, my continent) outcomes of my actions.	3.59	1.72	0.8090	3.83	1.58	0.7901
I generally ignore warnings about possible problems in distant parts of the world, because I think the problems will not affect me.	2.98	1.76	0.7587	3.47	1.75	0.7567
I think that considering consequences for people in distant parts of the world unnecessary since outcomes there can be dealt with locally.	3.07	1.76	0.7350	3.38	1.66	0.7933
Attitude: Agriculture	Cronbach's alpha: .6602			Cronbach's alpha: .8303		
Different actions of conventional agriculture (e.g. excessive use of pesticides) are a	5.76	1.53	.6475	5.41	1.46	.6802
Organic agriculture is overall less harmful to our environment than conventional agriculture.	4.94	1.54	.8009	4.90	1.54	.8314
Produce from organic agriculture is healthier than produce from conventional agriculture.	4.51	1.74	.8207	4.32	1.65	.8750
Organic food products are better for our health than food products from conventional agriculture.	3.83	1.92	.5574	4.25	1.69	.8615
Attitude: Fair-Trade	Cronbach's alpha: .8082			Cronbach's alpha: .8014		
Fair compensation and treatment of farmers/workers in the global south is important in order to achieve global economic equality.	5.55	1.40	.9161	5.17	1.55	.9134
One of the reasons of global economic inequality is the unfair compensation and treatment of workers/farmers in the global south.	5.52	1.45	.9161	4.92	1.56	.9134
Attitude: Climate Change	Cronbach's alpha: .6659			Cronbach's alpha: .6626		
The main cause of climate change is increased CO2 emissions due to human activities.	5.32	1.69	.8659	4.96	1.70	.8652
Climate change is mainly due to natural causes, not due to increased CO2 emission by human activities.	2.80	1.74	.8659	3.35	1.85	.8652
Purchase Intention	Cronbach's alpha: .8198			Cronbach's alpha: .8083		
When grocery shopping, I intend to purchase food products that were grown organically (if available).	4.18	1.78	.8034	3.58	1.75	.6697
I do not pay attention to the fact whether the food products I purchase come from organic agriculture.	3.93	1.99	.6677	4.24	1.89	.7027
When grocery shopping, I intend to purchase food products that involve fair treatment and fair compensation of workers (if available).	4.58	1.71	.8079	4.30	1.73	.7690
When shopping, I do not pay attention whether food products were produced / grown under fair working conditions.	3.94	1.91	.5904	4.11	1.87	.7193
When grocery shopping, I intend to purchase food products that have a comparatively low carbon footprint or that are climate neutral (if available).	3.98	1.85	.7891	3.88	1.65	.7476
When grocery shopping, I do not pay attention to the carbon footprint of food products or if these food products are climate neutral (even if the necessary information is available).	4.34	1.84	.7004	4.29	1.78	.6847

Note. Scale from 1 'not true of me at all ' to 7 'extremely true of me'. N=465 (GER) N=452 (U.K.); Kaiser-Meyer-Olkin measure of sampling adequacy: CFC-Scale 0.7742 (GER), 0.8389 (U.K.); CGC-Scale 0.8323 (GER), 0.8264 (U.K.), Warm Glow 0.8725 (GER), 0.7496 (U.K.); Attitude Agriculture 0.618 (GER), 0.7170 (U.K.); Attitude Fair-Trade 0.500 (GER), 0.500 (U.K.); Attitude Climate Change 0.500 (GER), 0.500 (U.K.); Purchase Intention .8265 (GER), .8134 (U.K.).

Table A2

Results from Path Analysis for Fair-trade Claim

Germany r^2=.71				U.K. r^2=.58		
	Total effects	**Indirect effects**	**...on…**	**Indirect effects**	**Total effects**	
Intention	.248 ***		-> Part-Worth Utility		.105 *	Intention
Warm Glow	.151 **	.104 ***		.010 **		Warm Glow
Attitude	.104 *	.041 ***		.026 ***	.162 ***	Attitude
Knowledge	.130 ***	.023 *		.030 **		Knowledge
Awareness						Awareness
Gender	-.121 ***	-.023 **		.023 **	-.105 **	Gender
Income					.086 *	Income
Universalism		.074 **		.058 ***		Universalism
Leadership	-.106 **				-.109 **	Leadership
Future					.120 **	Future
Global	.100 *	.144 ***		.047 *		Global
Local		-.065 ***		-.038 **	-.168 ***	Local
Immediate						Immediate
Warm Glow	.417 ***		-> Purchase Intention		.097 **	Warm Glow
Attitude	.119 ***	.104 ***			.279 ***	Attitude
Knowledge	.064 *			.041 **	.171 ***	Knowledge
Awareness						Awareness
Gender	-.084 **				.070 *	Gender
Income				-.021 *		Income
Universalism	.127 ***	.130 ***		.101 ***	.144 ***	Universalism
Leadership	-.108 ***					Leadership
Future	.076 *	.035 **				Future
Global	.466 ***	.190 ***		.042 **	.431 ***	Global
Local	.-216 ***	-.046 **		-.022 **	-.280 ***	Local
Immediate				-.043 **		Immediate
Attitude	.249 ***		-> Warm Glow			Attitude
Knowledge		.024 **				Knowledge
Awareness						Awareness
Gender					-.106 **	Gender
Income						Income
Universalism	.294 ***	.114 ***				Universalism
Leadership		.032 ***			-.105 **	Leadership
Future	.087 **				.127 **	Future
Global	.448 ***	.033 **			.170 ***	Global
Local	-.106 **	-.024 *				Local
Immediate					-.201 ***	Immediate
Knowledge	.099 **		-> Attitude		.125 ***	Knowledge
Awareness						Awareness
Gender						Gender
Income					-.075 *	Income
Universalism	.460 ***				.344 ***	Universalism
Leadership	.131 ***					Leadership
Future						Future
Global	.132 ***				.095 *	Global
Local	-.096 *				-.104 **	Local
Immediate					-.088 *	Immediate

Note: Goodness of fit criteria : $Chi^2(46)=1016.563$ p= .594; RMSE=.000; CFI=1.000; TLI= 1.034 (GER); $Chi^2(46)=538.878$ p= .181; RMSE=.042; CFI=0.998; TLI= 0.927 (U.K.)

Table A3

Results from Path Analysis for Organic Claim

Germany r^2=.67				U.K. r^2=.57		
	Total effects	**Indirect effects**	**...on…**	**Indirect effects**	**Total effects**	
Intention	.171 **					Intention
Warm Glow		.057 ***		.007 **		Warm Glow
Attitude	.195 ***	.046 ***		.021 ***	.187 ***	Attitude
Knowledge		.033 **				Knowledge
Awareness	.111 **				.192 ***	Awareness
Gender		-.034 **	-> Part-Worth Utility	.032 **		Gender
Income						Income
Universalism				.057 ***		Universalism
Leadership		-.027 **				Leadership
Future	.163 ***	.025 *				Future
Global		.089 **				Global
Local		-.051 ***				Local
Immediate						Immediate
Warm Glow	.332 ***				.102 **	Warm Glow
Attitude	.328 ***	.074 ***			.276 ***	Attitude
Knowledge	.090 **	.042 **			.140 ***	Knowledge
Awareness			-> Purchase Intention		.093 **	Awareness
Gender	-.096 **	-.047 **			.070 *	Gender
Income						Income
Universalism	.119 *	.152 ***		.096 ***	.147 ***	Universalism
Leadership	-.110 ***					Leadership
Future		.057 **		.040 **		Future
Global	.468 ***	.198 ***		.045 ***	.416 ***	Global
Local	-.223 ***	-.067 **			-.273 ***	Local
Immediate				-.046 ***		Immediate
Attitude	.224 ***					Attitude
Knowledge		.029 ***			.118 **	Knowledge
Awareness						Awareness
Gender		-.029 ***	-> Warm Glow		-.111 **	Gender
Income						Income
Universalism	.294 ***	.047 ***				Universalism
Leadership					-.111 **	Leadership
Future	.081 **	.026 **			.131 **	Future
Global	.446 ***	.044 ***			.160 ***	Global
Local	-.112 **	-.026 **				Local
Immediate					-.206 ***	Immediate
Knowledge	.129 ***					Knowledge
Awareness						Awareness
Gender	-.129 ***				.120 **	Gender
Income			-> Attitude			Income
Universalism	.212 ***				.314 ***	Universalism
Leadership						Leadership
Future	.118 **				.091 *	Future
Global	.196 ***				.104 **	Global
Local	-.116 **					Local
Immediate	.090 *				-.088 *	Immediate

Note. Goodness of fit criteria: $Chi^2(46)=993.529$ p= .353; RMSE=.000; CFI=1.000; TLI= 1.007 (GER); $Chi^2(46)=517.815$ p= .185; RMSE=.041; CFI=0.998; TLI= 0.926 (U.K.).

Table A4

Results from Path Analysis for Climate-Neutral Claim

Germany r^2=.69				U.K. r^2=.53		
	Total effects	**Indirect effects**	**...on…**	**Indirect effects**	**Total effects**	
Intention	-.255 ***					Intention
Warm Glow	-.170 **	-.108 ***		-.008 **		Warm Glow
Attitude		-.031 **				Attitude
Knowledge						Knowledge
Awareness	.137 ***				.156 ***	Awareness
Gender		.024 **				Gender
Income						Income
Universalism		-.061 **				Universalism
Leadership						Leadership
Future		-.032 **				Future
Global		-.150 ***				Global
Local		.074 ***				Local
Immediate						Immediate
Warm Glow	.424 ***				.086 **	Warm Glow
Attitude	.077 *	.074 ***		.016 ***	.118 ***	Attitude
Knowledge		.042 **			.077 **	Knowledge
Awareness					.117 ***	Awareness
Gender	-.080 **	-.047 **				Gender
Income						Income
Universalism	.133 ***	.152 ***		.030 **	.147 ***	Universalism
Leadership	-.111 ***					Leadership
Future	.082 *	.057 **		.023 **		Future
Global	.466 ***	.198 ***		.026 **	.434 ***	Global
Local	-.222 ***	-.067 **		-.021 **	-.290 ***	Local
Immediate				-.020 *		Immediate
Attitude	.174 ***				.190 ***	Attitude
Knowledge						Knowledge
Awareness						Awareness
Gender					-.108 **	Gender
Income						Income
Universalism	.299 ***	.031 ***		.043 ***		Universalism
Leadership					-.113 **	Leadership
Future	.087 **			.022 *	.131 **	Future
Global	.446 ***			.021 *	.177 ***	Global
Local	-.110 **	-.015 ***		-.030 **		Local
Immediate					-.202 ***	Immediate
Knowledge						Knowledge
Awareness						Awareness
Gender						Gender
Income						Income
Universalism	.176 ***				.230 ***	Universalism
Leadership						Leadership
Future	.115 **				.115 **	Future
Global					.109 **	Global
Local	-.244 **				-.139 **	Local
Immediate	.088 *					Immediate

-> Part-Worth Utility

-> Purchase Intention

-> Warm Glow

-> Attitude

Note: Goodness of fit criteria : $Chi^2(46)=896.694$ p= .284; RMSE=.0018; CFI=1.000; TLI= 992 (GER); $Chi^2(46)=416.975$ p= .131; RMSE=.053; CFI=0.997; TLI= 0.841 (U.K.).

CHAPTER 3

3 THE MANY ASPECTS OF VOLUNTARY SUSTAINABILITY GOVERNANCE: UNPACKING CONSUMERS' SUPPORT FOR TEA STANDARDS IN CHINA AND THE UK[4]

Sarah Iweala, Yixian Sun

ABSTRACT

Voluntary standards have become a promising mode of governance to promote sustainable production and consumption in global value chains. Despite a growing number of studies on consumers' preferences for sustainable products, insufficient attention has been paid to the heterogeneity of existing standard systems, which prioritize different issues (e.g. environment, labour, and health), have different origins and sponsors, imply different costs and stringency. How do these features affect consumer support across market contexts? By conducting a choice-based conjoint experiment with tea drinkers in China and the UK (N=1,823), we find that consumer support for sustainable tea standards in both countries is primarily driven by food safety concerns, to a lesser extent by concerns of environmental and labour issues. Moreover, Chinese consumers support highly stringent standards only, whereas British consumers also accept medium-level standards. Standard sponsor and origin only matter for consumers in China who favour government-designed, international standards. Consumers' preferences for key standard features are associated with individual values, the warm glow of giving, and sustainability concerns but such relationships vary in the two markets. Our findings have important implications for scaling-up sustainability standards in both emerging and developed markets.

[4] This manuscript is in similar form under review at the Journal of Cleaner and Responsible Consumption (as of 14 March 2022).

The contributions of each author are as follows: Sarah Iweala (SI) and Yixian Sun (YS) conceptualized the research and designed the survey together. Data was gathered and compiled by SI. SI analyzed the data. SI and YS interpreted results together. The writing was done by SI and YS. SI and YS commented and revised the paper jointly. SI and YS read and approved the final manuscript.

3.1 INTRODUCTION

Over the last three decades, voluntary sustainability standards (VSS) have become a promising mode of regulatory governance in global value chains. VSS are not required by law, but are used in supply chains to recognize, track, and label products from environmentally and socially responsible businesses (Bernstein & Cashore, 2007; United Nations Forum on Sustainability Standards, 2013). With the proliferation of VSS, many researchers of food governance have turned their attention to relevant schemes and have assessed their rise and evolution (Auld, 2014; Fuchs & Kalfagianni, 2010; Fulponi, 2006). This strand of research has provided critical insights into the causes of major VSS schemes and the forces shaping key standard features such as transparency and credibility (Fuchs & Kalfagianni, 2010; Schleifer, Fiorini, & Auld, 2019; van der Ven, 2019).

The role of consumers in driving the rise and expansion of VSS remains debatable. On one hand, the power of political consumerism has been deemed a critical underlying factor contributing to the emergence of sustainability governance such as standard and labelling schemes (Boström, Micheletti, & Oosterveer, 2019; Stolle & Micheletti, 2013). On the other hand, research on specific governance initiatives has shown that the development of many VSS was primarily driven by the interests of powerful actors such as large businesses, environmental NGOs, and governments (Auld, 2014; Bartley, 2007; Vogel, 2010). Considering limited understanding of consumers about many standards and high variability of consumer support for sustainable products, one may suggest that consumers' opinion has little influence on the problem-solving effectiveness of standards (Grunert et al., 2014; Hainmueller, Hiscox, & Sequeira, 2015). Furthermore, the so-called intention-behaviour gap serves as an explanation for a small market share of products compliant with VSS despite the overall positive attitude and intention of consumers to purchase those (Grimmer & Miles, 2017; Lusk, 2018). That said, as pointed out by Bullock and van der Ven (2020), this view focuses too narrowly on individual consumers' purchasing decisions, without considering the broader influence that consumers can exert as an 'imagined collective' on different stakeholders of VSS. From this perspective, consumers' opinion and their anticipated behaviour should have a shadow over the strategies of VSS. Hence, it is crucial to investigate consumers' preferences with respect to the content and design features of VSS, even more so when taking into consideration that most standards have consumer-facing labels.

The proliferation of VSS with different features in many supply chains has important implications for sustainable food governance. For instance, in the coffee sector, several standards co-exist, but vary in many important aspects in order to target different niche markets (Grabs, 2020). Similar trends also exist in other commodities such as cocoa and tea (Meier et al., 2020). Therefore, it is important to know how the content of standards, their origin, sponsors, and also cost influence consumer support for sustainable products.

Our study builds on existing studies that have assessed consumers' preferences and willingness-to-pay (WTP) for existing and fictious VSS (e.g. Grebitus et al., 2015; van Loo et

al., 2015; Weinrich & Spiller, 2016), and goes beyond by asking how specific features of VSS determine consumer support in different markets: Do consumers value environmental standards more than labour ones when shopping? Are stricter standards valued more when consumers are faced with multi-tiered instead of binary standards? Are standards created by private actors trusted more than those created by public actors? To complement past research primarily focusing on market dynamics in the Global North, we compare consumers in a developed market (UK) with those in an emerging market (China) to investigate how economic, socio-political, and cultural contexts influence consumers' support for VSS.

In a choice experiment with 1,823 respondents in the UK and China we assess how specific features of sustainable tea standards determine consumers' product choices. We chose tea as the empirical focus due to the existence of several VSS for this product that have been widely adopted in the global market – as of 2020, VSS were used in between 16.1% and 21.7% of the global tea production area (Meier et al., 2020). Compared to other commodities like coffee and cocoa, tea is a less studied commodity in the VSS literature despite being the most consumed beverage in the world with high consumption rates in both the Global South and North (FAO, 2015). In our experiment, we present participants with products featuring multi-level standards as text varying in their cause (environmental, social and food safety), key design features (origin and standard sponsor) and price. We also capture concepts such as values and sustainability concerns in our questionnaire in order to identify possible differences in the links among those concepts and support for the various standard features between the two markets.

Our findings show that consumer support for sustainable tea standards is primarily driven by food safety concerns, to a lesser extent by concerns about environmental and labour issues. British and Chinese consumers derive most utility from the most stringent food safety standard. The picture differs with respect to environmental and social regulations: Chinese consumers value the highest standards only, whereas British consumers value the medium standards as well. Furthermore, unlike in the UK, the origin and sponsor of standards are important determinants of consumer support for VSS in China who favour government-made, international standards. Lastly, British consumers are highly price sensitive, whereas Chinese consumers are reluctant to buy cheap tea. Support for high and medium levels of environmental, social and food safety standards in the UK is linked to sustainability concerns regarding the food sector. In China, our findings suggest that consumer preferences for VSS are shaped by values, such as security, stimulation, and tradition.

In the rest of the paper, we first review the existing literature on consumer support for VSS to derive the hypotheses for our study. We then explain our research method and data. This is followed by the presentation of our empirical findings. We conclude by discussing the policy implications of our research.

3.2 LITERATURE REVIEW & HYPOTHESES

The growth of studies on consumer preferences for VSS matches the growth of VSS in the past decade.[5] The majority of empirical studies focus on food products, organic standards and consumers in a single country, mostly in the Global North (Bangsa & Schlegelmilch, 2020). Coffee stands out as one of the earliest commodities targeted by VSS and a sector having a high rate of certified production.[6]

In comparison consumer preferences towards VSS in the tea sector remain underexplored despite the large numbers of tea drinkers globally. In fact, due to reported labour (e.g. low wages, hard working conditions, child labour) and environmental issues (e.g. abundant application of pesticide, land use changes) associated with global tea supply chains, tea has been among the first agricultural commodities targeted by VSS (Henderson & Nellemann, 2012; van der Wal, 2008). Today, at least 16% of the global tea production area is compliant with some VSS (Meier et al., 2020). Moreover, unlike other cash crops such as coffee and cocoa, tea has the unique feature of being largely consumed in both Northern and Southern markets; China and the UK representing large markets for each. Yet, for consumers in the UK tea is purely an imported commodity from Southern producing countries whereas for Chinese consumers, most teas in the market are domestically produced. In terms of trade, the UK is the 4th largest tea importer in the world, with a world share of 4.6%; China is the largest tea exporting country, providing 22.2% of total world exports in 2019 (UN Department for Economic and Social Affairs, 2021). Accordingly, consumers' expectations in VSS are likely to differ in both markets.

Food safety issues are highly salient in China due to several food scandals over the last decade (Kendall et al., 2019; Pei et al., 2011; Yan, 2012). Studies find food safety the main driver of Chinese consumers' support for VSS in the food sector, especially in respect to organic food[7] (Liu, Pieniak, & Verbeke, 2013; Thøgersen et al., 2015; Yin et al., 2010). We expect no exception in our study.

H1: Chinese tea consumers are willing to support VSS schemes setting high food safety standards.

In comparison, the rise of VSS in Northern markets has been driven more by environmental and labour issues. This is especially the case for tea where labour rights violation is a salient issue reported by media (LeBaron, 2018; Rowlatt, 2016). Research on certified tea products in the German market reveals a larger price premium that consumers are willing to pay for fairly traded than for organic products (Bissinger & Leufkens, 2017). Considering that the UK is the largest market for Fairtrade certified products (Lernoud et al., 2017) we expect a similar pattern in the UK market. Moreover, the Carbon Trust in the UK introduced the first carbon

[5] On the latest uptake of VSS in food and agricultural sectors see Meier et al., 2020.
[6] To date, at least 21% of the global coffee production is compliant with at least one VSS (Meier et al., 2020).
[7] In China, the term safe food is often used. It comprises hazard free, organic and green food (Liu et al., 2013).

footprint consumer-facing label and the British retailer Tesco used it on numerous of its products. Even though Tesco dropped this labelling scheme, studies find that majority of consumers in the UK have a stated preference for carbon labels (Gadema & Oglethorpe, 2011).

H2: British tea consumers are willing to support VSS schemes setting high environmental and labour standards.

Past research indicates that consumers' willingness to buy sustainable products depends on the extent to which they perceive the relevant standard is credible and trustful (Ricci et al., 2018). It is expected that this trust is closely connected to the source of the VSS including who creates and implements the relevant standards. UK consumers trust the government and environmental NGOs to provide credible information, but business-sponsored eco-labels would need to be third-party certified (Darnall et al., 2018). Chinese consumers tend to value government certification programs to signal food safety, followed by third-party certification, a traceability system, and a product-specific information label (Ortega, Wang, Olynk, Wu, & Bai, 2012). Trust in food safety information by consumers in China is largely derived from the government and less from the market such as private certifications or other civil society arrangements (Bai, Zhang, & Jiang, 2013; Zhang, Xu, Oosterveer, & Mol, 2016). Hence, we expect:

H3: Chinese tea consumers are more willing to support VSS schemes sponsored by governments compared to those sponsored by businesses and NGOs.

Relatedly, given that most transnational VSS are new to Chinese consumers and led by non-state actors, Chinese consumers are likely to support domestic standards more than foreign standards. In fact, VSS schemes originating from the Global North have been introduced to China only recently, and remain unknown to most consumers (Li et al., 2016). The governance model of certification and labelling remains a relatively new concept in China for many supply chain stakeholders and consumers (Schleifer & Sun, 2020; Sun & van der Ven, 2020). It is hence not surprising that Chinese tea consumers prefer the Chinese organic label although Japanese and US organic labels exist in the market (X. Yang et al., 2021). This leads us to expect:

H4: Chinese tea consumers are more willing to support domestic VSS schemes compared to international schemes.

Price may play different roles in influencing consumers' support for VSS. While tea is a popular beverage in the UK, the commodity has a special cultural meaning in China and therefore can be considered a luxury product such that the average market price of tea in the Chinese market is much higher than in Northern markets (CTMA, 2019). Also, household spending on food is relatively low in the UK, and so are overall food prices.[8]

[8] See official statistics https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20181204-1 and https://ec.europa.eu/eurostat/statistics-

H5: British tea consumers are more price sensitive than Chinese consumers when choosing products compliant with VSS.

With respect to the impact of consumer characteristics on support for VSS, past research has drawn mixed pictures. We, therefore, did not hypothesize relational directions but were simply interested in identifying possible differences at the individual level between our country samples. For that purpose, we included the following concepts: 1) Values, which are found to be more stable than preferences and important predictors of sustainable practices (Doran, 2009; Lusk & Briggeman, 2009; Vermeir & Verbeke, 2008). 2) The warm glow of giving, a concept describing the positive utility people derive when doing good, which has been found to be positively linked to pro-environmental behaviour (Hartmann et al., 2017; van der Linden, 2018) and sustainable consumption (Iweala, Spiller, & Meyerding, 2019). 3) Sustainability concerns as proposed by Grunert et al. (2014), which are tailored towards the food sector, and are, therefore, closely connected to the different VSS encountered by our survey participants.

3.3 EXPERIMENTAL DESIGN & METHODS

We conducted a hypothetical choice-based conjoint experiment with tea drinkers in China (N=918) and the UK (N=905) between October and December 2019. We designed our experiment and questionnaire in the software Sawtooth. A panel provider recruited participants from their pool of registered participants. They were filtered by their tea consumption to only include frequent tea drinkers (3 or more times per week). To reflect the age and gender structure of each population, we set quotas for each in line with the latest census data. The data cleaning process resulted into a sample with the characteristics as presented in Table A1.[9]

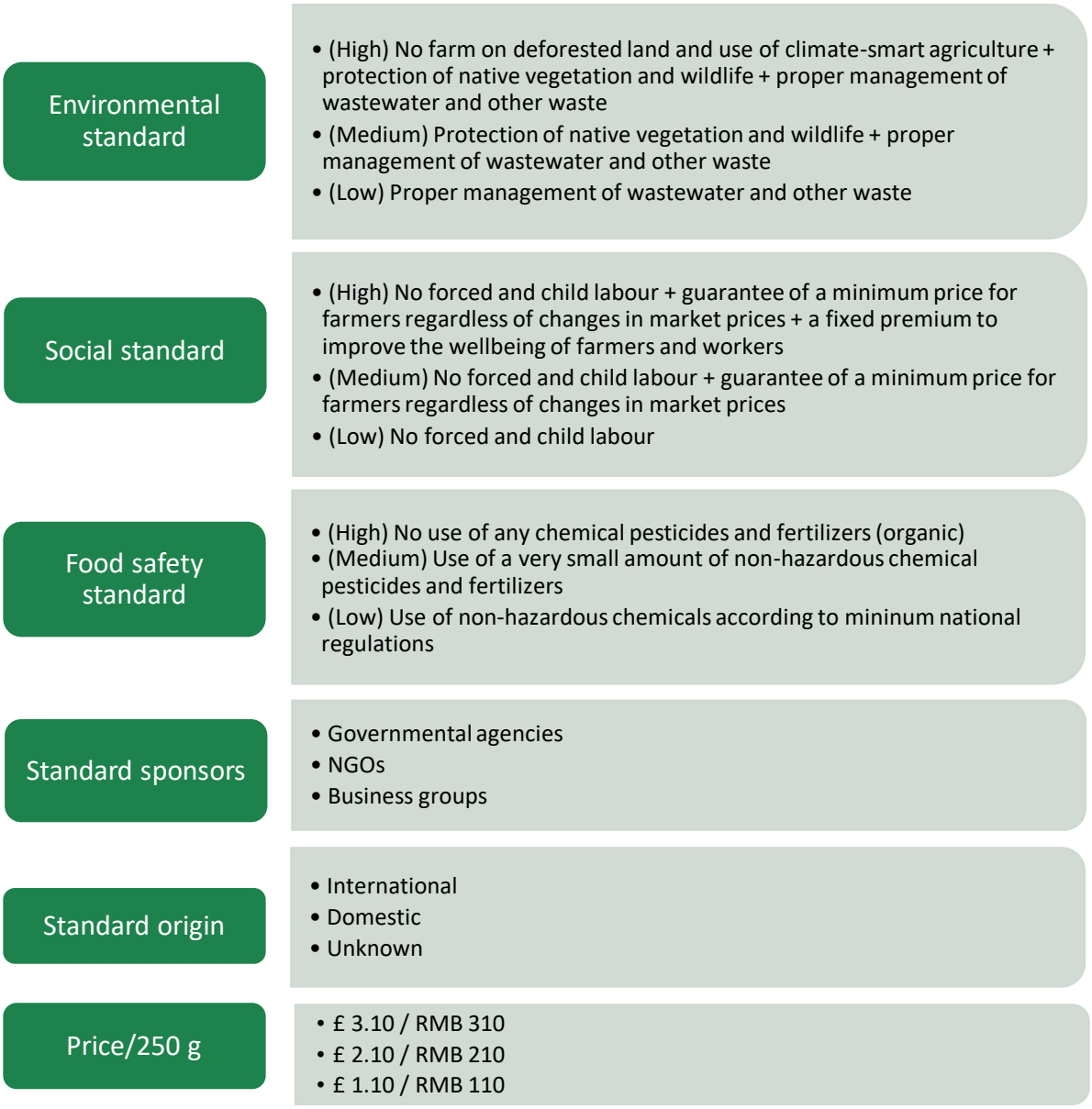
The first part of our survey covers socio-demographic questions; followed by eight choice tasks. In each task, the respondents are asked to imagine themselves purchasing their favourite tea. Each choice situation consists of two tea products randomly varying in six attributes and a no-buying option. The six attributes and their levels are presented in Figure 3-1. The selection of attributes and levels was guided by existing VSS in the market, relevant tea production factors, and insights from existing studies. For instance, the different levels of the food safety standard are in accordance to the classification in China of organic agriculture

explained/index.php?title=Comparative_price_levels_of_consumer_goods_and_services#Price_levels_for_food.2C_beverages.2C_tobacco.2C_clothing_and_footwear (accessed last on 12 March 2022).

[9] The data cleaning process involved identifying and removing participants, that (a) finished the questionnaire in less than 1/3 of the median completion time and (b) that showed monotone answering behavior in more than three statement batteries. This data cleaning strategy resulted in excluding 84 participants from the China sample and 94 participants from the UK sample.

(high), green food (medium) and hazard-free food (low) (Scott, Si, Schumilas, & Chen, 2014).[10] Similarly, we manipulate the levels of environmental and social standards to reflect different criteria used by existing VSS (e. g. high social standard imitating Fairtrade). Insights from sustainability governance motivates the inclusion of the sponsor and origin of VSS as they are suggested as important features that can influence consumers' trust in VSS. The experiment is designed via the balanced overlap method. Hence, levels repeat within the same choice task sometimes in order to increase the precision of interaction effects of levels.

Figure 3-1. Attributes used in the choice-based conjoint experiment



Note: Price levels are chosen based on the average market price in each market.

[10] From a production perspective, the use of pesticides and fertilizers in farming are relevant for environmental factors. By enlisting it as a separate standard, we intend to disentangle consumers' motivations that are based on personal benefits as opposed to public benefits.

To measure the value system of participant, we employ the Portrait Values Questionnaire (PVQ-21) as developed and validated by Schwartz et al. (2001). It captures the ten distinct values that are recognized across cultures (Schwartz, 1992), namely power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security. We capture the feeling of the warm glow of participants via established items (Hartmann et al., 2017; van der Linden, 2018) that were adjusted previously to match our context (Iweala et al., 2019). We measure sustainability concerns related to the food sector via seven out of originally 14 items set by Grunert et al. (2014).[11]

Our main data analysis is based on the hierarchical bayes (HB) estimation technique to estimate the average as well as individual part-worth utilities for each attribute and its corresponding levels and to identify the key determinants of consumer support for VSS-compliant products. Modelling of individual level parameters is based on each individual's choice behaviour in combination with the information from the entire sample. Each respondents' utilities are estimated in relation to the estimates of the average utilities of the sample. This process is repeated for thousands of iterations as the individual and average utilities update each other until the estimates stabilize. The estimation was performed via the software Sawtooth, which employs the HB Multinomial Logit model using a Monte Carlo Markov Chain algorithm (Sawtooth Software Inc., 2021). The method also allows us to use the individual part worth utilities in a subsequent OLS regression to investigate which consumer characteristics are associated with a higher valuation of the various attribute levels. For that purpose, the dimensionality of the aforementioned concepts is reduced via principal component analysis (Jolliffe & Cadima, 2016).

Prior to discussing our results, limitations of our study design need to be addressed. First, due to the hypothetical setting of our choice experiment, the measured consumer support of VSS features are stated preferences. We can, therefore, not ignore the possibility that the stated support for certain features is inflated due to hypothetical as well as social desirability bias. While social desirability bias is often named as a factor contributing to the intention-behaviour gap in sustainable consumption (Lusk, 2018), anonymous data collection without direct contact with an interviewer can reduce social desirable answering behaviour (Grimm, 2010). Considering that our participants in both country samples chose price as the most important attribute, we believe that such biases are unlikely to play a major role and are, therefore, unlikely to change the ensuing order of support for VSS attributes. On sampling, we were only able to set quota for gender and age, none in respect to education and income. Hence, our samples are less reflective of the given structure in the population, especially for China where the low-income group is underrepresented. We take this into account when interpreting the results of the choice experiment.

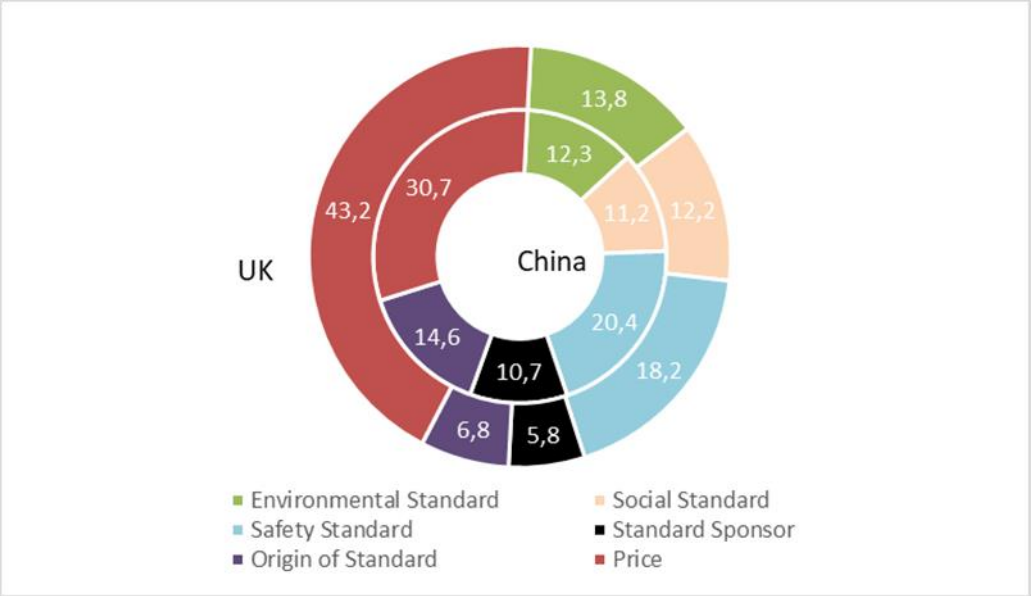
[11] Please see the supplementary material for a list of all items.

3.4 RESULTS

3.4.1 RELATIVE IMPORTANCE OF ATTRIBUTES & THEIR LEVELS

Based on the HB estimation, we derive the average importance for each attribute as well as average utilities for each level. Figure 3-2 illustrates the average importance of our six employed attributes. It must be noted that our results are dependent on this combination of attributes. In this combination, price makes the biggest difference in both samples. At 43.2%, its relative importance is more pronounced in the UK than in China (30.7%). Among different standard types, it is the food safety standard that plays the biggest role for participants in both countries, followed by the environmental and social standard. Differences emerge regarding the origin and designer of standards. For Chinese consumers, the average importance of standard origin and standard sponsor is respectively at 14.6% and 10.7% – the former is even bigger than the importance of social and environmental standards. In the UK sample, these are the two least important attributes, contributing only 6.8% and 5.8% to the total utility of the imaginative tea product.

Figure 3-2. Average importance (in %) of the six employed attributes



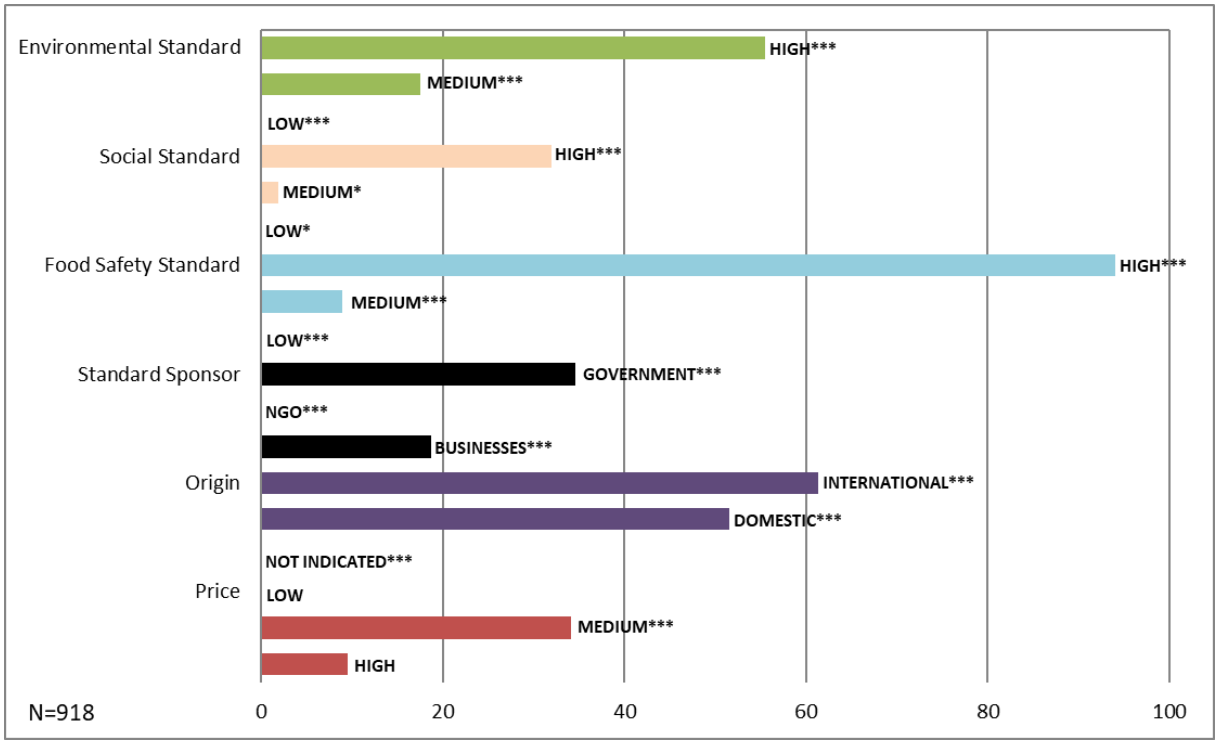
Figures 3-3 and 3-4 illustrate the average utilities by level for each attribute.[12] They capture the preference structure of the participants in each sample. The raw part-worth utilities are normalized so that their sum within an attribute equals to zero. For a more intuitive interpretation of results, we added the negative utility of the least preferred level to the utility of the other levels, so that the least valued level is set at 0.

The analysis of the China sample shows that participants derive the largest utility from the most stringent level of each VSS. The medium level of each standard results into moderate

[12] We used multinomial logit regression as robustness check and found similar results (see Tables A2 and A3 in the appendix).

utility gains, which are more similar in size to the low as to the high level. Hence, the choices of participants are driven by the most stringent level of each standard. In respect of standard sponsor, participants derive the largest utility if the VSS is government-owned, followed by VSS set by businesses. VSS set by NGOs are the least preferred. In terms of the attribute 'origin', the level 'international' induces the largest average utility, followed by the level 'domestic'. It is preferred the least, if the origin is not indicated. All observed differences in the average utility of the respective levels are statistically significant, except for the attribute 'price'. It is the medium price level that results into the largest average utility. Whereas the difference of this level is statistically different to the other two levels, the difference between the low and high price levels are not, suggesting that Chinese consumers are more willing to choose mid-range priced tea.

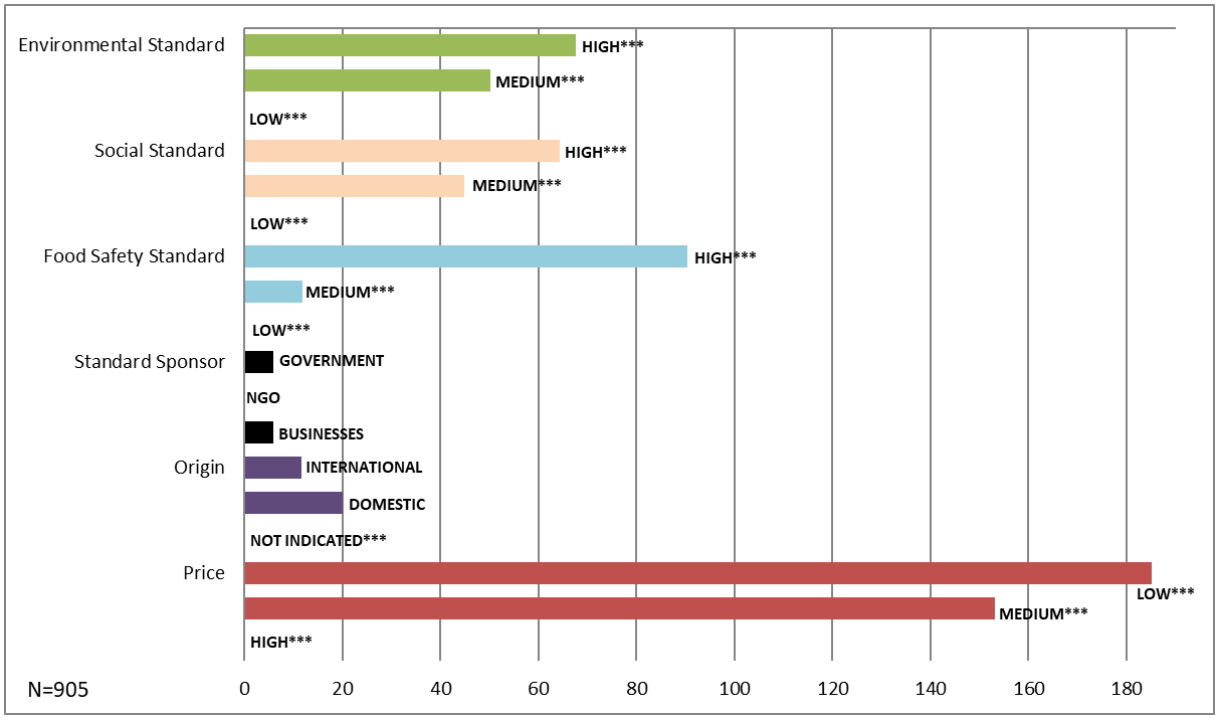
Figure 3-3. Average Utilities by level in the China sample



In the UK, the average utilities regarding the food safety levels are rather similar: respondents also derive the largest utility from the most stringent standard while the medium level only results into minor utility gains, with the low level preferred the least. Regarding the environmental and social standards, participants derive the largest utility from the most stringent VSS too; yet, the medium levels result into a positive average utility that is closer in size to the high as compared to the low level. UK participants pay little attention to standard sponsors as no level results into statistically significant increases in utility. In respect to standard origin, participants are more willing to choose VSS-compliant tea when the origin of standards is indicated, but it plays no role whether it is an international or domestic standard. The differences in the average utilities of the price levels are comparatively large

and significant. Participants derive on average most utility from the low price, to a slightly lesser extent from the medium price. They perceive the most expensive tea option as the least attractive – a result underlining the price sensitivity of British consumers.

Figure 3-4. Average Utilities by level in the UK sample



3.4.2 INDIVIDUAL CHARACTERISTICS

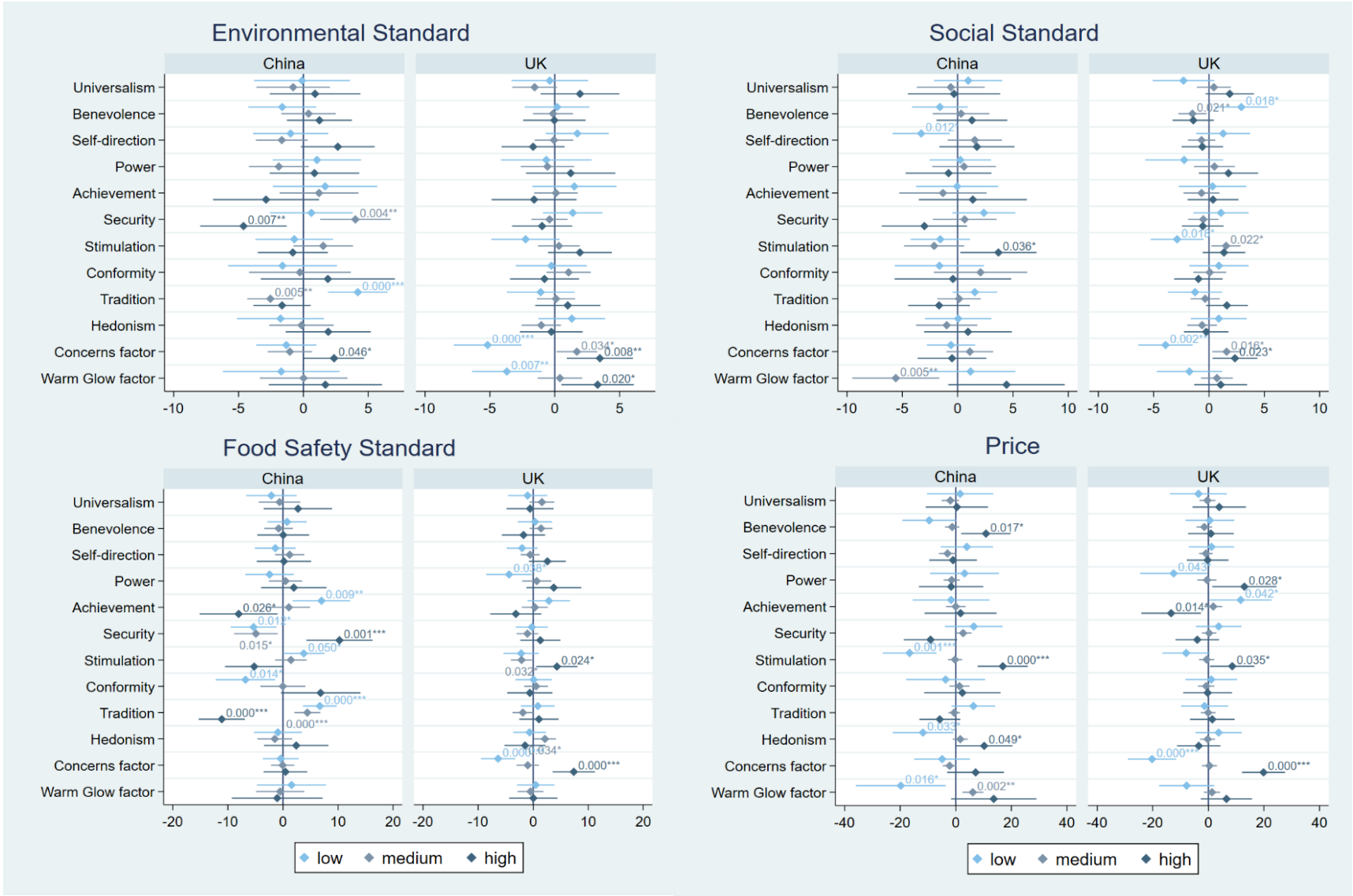
We assess the relationships between consumer characteristics and different standard features by using the individual part-worth utilities by attribute level as dependent variables in an OLS regression. Figure 3-5 reports the regression coefficients of values, sustainability concerns and warm glow factor. Socio-demographics were included as covariates but are not reported here.[13]

Starting with China, it becomes apparent that the food safety standard has most associations with the underlying value system of respondents. The value 'security' has strong positive associations with the high food safety standard that turn negative for the medium and low levels. This relationship is flipped for 'achievement', 'stimulation' and 'tradition', as those are negatively associated with the most stringent food safety standard but positively with the least stringent one.

[13] Please see the online supplementary material for full regression tables.

Associations are fewer between participants' value system and the social and environmental standards. The environmental standard appears like a slight mirror image of the food safety standard: 'security' is negatively linked to the most stringent level but positively to the medium level. 'Tradition' is positively linked to the low level but negatively to the medium level. Only participants' sustainability concerns are positively linked to the high environmental standard. On the social standard, the stringent level is positively linked to 'stimulation' whereas the low level links to 'self-direction'. The more respondents experience the warm glow, the more they value the stringent social standard (at the 10%-significance level) and the less they value the medium level. The warm glow is also positively linked to the high and medium price levels but negatively to the low level. Additionally, respondents who identify with the values of 'hedonism', 'stimulation' and 'benevolence' tend to choose high-priced tea products instead of low-priced ones.

Figure 3-5. OLS regression coefficients of consumer characteristics (dependent variable: individual part worth utilities by attribute level)



Links between consumer characteristics and standard features follow a different pattern in the UK. The more respondents are concerned about sustainability issues in the food sector, the more they value high environmental, social and food safety standards. These positive links are also given for the medium level of the environmental and social standards. At the same time, the more participants are concerned, the less they value the low standard of all three dimensions.

Other links are standard specific and less consistent. The more participants experience the warm glow when doing good, the more they value the stringent environmental standard and the less the low environmental standard. The value system plays a minor role in our UK sample. The medium social standard is positively associated with 'stimulation' and its low level negatively. In turn, 'benevolence' has a negative link with the medium level, but a positive one with the low social standard. 'Stimulation' is also positively associated with the high food safety standard. Lastly, several links to consumers' price preferences are given. 'Stimulation' and 'power' are positively associated with the high price level. The same holds for respondents with increased sustainability concerns. 'Achievement' is linked negatively to the high price and positively to the low price.

3.5 DISCUSSION & CONCLUSION

While our results suggest similarities at a general level between consumers' preferences for sustainable tea standards in China and the UK, several underlying distinctions emerge when analysing attribute-levels and individual characteristics more in detail. Thus, our findings have important implications for the design and promotion of VSS in different market contexts.

3.5.1 SUPPORT FOR STRONG FOOD SAFETY STANDARD DUE TO PRIVATE BENEFITS

Independent of price, participants in both countries value the food safety standard most, precisely the most stringent level that prevents the use of chemical pesticides and fertilizers. This finding is in support of H1, demonstrating that food safety concern is a key driver of consumer support for sustainable tea standards in China. The link between the value 'security' and the valuation of the stringent standard supports the idea that this preference is driven by personal health safety reasons in China (Thøgersen et al., 2015; Yin et al., 2010). 'Security' is operationalized as a preference towards living in secure surroundings and avoiding dangers to personal safety. Hence, the association between 'security' and organic standard illustrates the strong intention of Chinese consumers to protect their personal safety. Emphasizing personal (health) benefits through links to security is, therefore, a useful strategy to promote organic food consumption.

Strong support for the food safety standard by consumers in the UK is rather surprising when comparing it to the relatively weaker support for the environmental and social standards.

Previous studies in the UK also report that the preference for organic food is motivated by personal health reasons (Padel & Foster, 2005; Rana & Paul, 2017). However, we do not find a link between 'security' and the food safety standard; instead, such support is driven by sustainability concern in the UK.

Regardless of the underlying motivation, our findings highlight that consumers of both imported (UK) and domestically (China) produced tea perceive the use of chemical pesticides and fertilizers as a major food safety concern in the global tea industry, which indicates a policy problem. Data of official checks on pesticide residues by public food safety agencies often support this perception by recording non-compliance with regulations on maximum residue levels: in 2016 the EU found that 11.4 % of the imported tea from China was non-compliant (European Food Safety Authority, 2018). From an environmental perspective, research has shown that reduction of chemical pesticide and fertilizer application in tea production without a complete ban can largely mitigate land and water pollution, such as nutrient inputs to runoff water (Xie et al., 2019). Yet, for consumers being driven by personal health motives, a simple reduction of chemical pesticide and fertilizer application is not sufficient, as illustrated in the very low valuation of the medium and low levels of the food safety standard. Overall, our findings on the food safety standard suggest that framing standards as private opposed to public benefits can gather more support by consumers, but only if the standard is high. In combination with the smaller average importance of the environmental and social standards, our results align with studies showing that egoistic motives influence sustainable choices more than altruistic ones (Birch, Memery, & Silva Kanakaratne, 2018; van Loo, Grebitus, & Verbeke, 2021).

3.5.2 POTENTIALS AND LIMITS OF MULTI-TIER STANDARDS

The preference structures for environmental and social standards are different between our two country samples. Respondents in the UK show support for the medium level of the environmental and social standards. In combination with the average attribute importance in the UK, this finding partially supports H2.

To understand this result better, we refer to the level specifications as listed in Figure 3-1. The high and medium levels of the environmental and social standards differ respectively in 'no farm on deforested land and the use of climate-smart agriculture (e.g. agroforestry)' and in the 'fixed premium for farmers'. Despite the lack of those aspects, British consumers still value these standards, implying a potential market for sustainable labelling schemes that offer visibly different grades of stringency to consumers. Such multi-tier labels are already in use in the fields of nutrition and animal welfare (e.g. the EU-wide compulsory system of labelling table eggs). With regard to animal welfare, Weinrich and Spiller (2016) find that multi-tier labels can gain higher market shares as compared to binary labels. Our results in the UK point to a similar direction for environmental and social standards. In fact, our analysis on individual characteristics suggest that the high and medium levels of these standards can address

consumers' sustainability concerns regarding the food sector (see respective coefficients in the top two panels in Figure 3-5).

This finding must be seen in combination with our results on price: British consumers value the low price the most whereas Chinese consumers value it the least. We, therefore, find strong evidence to support our H5 suggesting that consumers in the UK are highly price-sensitive. This result aligns with past studies in Northern markets that find price as the core attribute when consumers state their preferences for different product attributes (e.g. Tait et al., 2019). It is also in accordance with the aforementioned low household spending on food in the UK. Hence, when designing new standards for this market, relevant stakeholders need to target price-sensitive consumers who are nevertheless concerned about sustainability issues. Based on the support for medium-level standards in connection with sustainability concerns, multi-tier sustainability standards might be a feasible approach to increase the demand for sustainable products and minimize the aforementioned intention-behaviour gap. Stringent standards often occur high costs and consequently lead to low market penetration, medium-level standards thus have the advantage to improve practices of more producers at lower costs while also appealing to more price-sensitive consumers.

That said, consumers in both samples show no preference for such multi-tier standards with regard to food safety. Sustainability concerns in the UK are distinctively not associated with the medium food safety standard. Considering that our definition of food safety is essentially an organic production standard, binary organic labels, such as the ones in place in the UK and China, are in line with consumer preferences.

Grades of stringency of VSS are perceived differently in China: the medium level of each standard derives significantly less utility than the high level. Multi-tier labels are therefore not expected to result into positive feedback from Chinese consumers, who appear to have higher demands in VSS. Consumers in China might be less familiar with sustainability standards in general and multi-tier standards in particular. This finding might also be related to the domestic production of tea: environmental and labour issues hit closer to home, so consumers care more about the social and environmental impacts of tea production – a phenomenon predicted by the theory of psychological distance (Barnes, 2019; Trope & Liberman, 2010). However, this reasoning does not align with the average importance of the social and environmental standards, which are not significantly higher in China than in the UK.

An alternative explanation is the cultural importance of tea in China, which supports the preference for the medium price level and associated consumer characteristics. The high and medium prices are linked to the feeling of the warm glow and the high price is linked to the value of 'hedonism', 'stimulation' and 'benevolence'. All of these concepts generate either a personal benefit or a benefit to someone close (i.e. 'benevolence'). In other words, the choice of expensive or medium-priced tea is associated more with this derived pleasure than the choice of cheaper tea. This might be due the phenomenon of conspicuous consumption (namely choosing the expensive product to signal status), which has become increasingly

prominent in China (Jin, Wang, Wang, Li, & Deng, 2015; Jinkins, 2016; Knight, Gao, Garrett, & Deans, 2008). It is likely to apply to tea because of the product's ceremonial character and traditional role in China. Additionally, high prices signal product quality and might constitute another mechanism for Chinese consumers to identify safe food and reduce risk (Kendall et al., 2019). Therefore, in respect to the design of VSS in the tea sector, price is not necessarily a limiting factor. From a consumer's perspective, a combination of mid-ranged prices and stringent standards might signal product quality and result into added personal value that go beyond the ordinary use-value of the product.

3.5.3 RELEVANT DESIGN FEATURES & MARKET-SPECIFIC COMMUNICATION

The standard sponsors play a marginal role in UK consumers' evaluation of VSS. In this respect, our results contrast with previous research showing that consumers in the UK prefer VSS led by the government and NGOs as compared to businesses (Darnall et al., 2018). This difference may be explained by the fact that past studies consider standard sponsors in isolation, without investigating the trade-off among different attributes that consumer face when making their choices. When more relevant attributes are included in the choice situation, consumers are forced to weigh different attributes against each other. Participants in China value government-designed VSS the most but derive no utility if a given VSS scheme is designed by NGOs. In supporting our H3, this finding lines up with previous research showing strong support of Chinese citizens for public regulation in the food sector (Fesenfeld, Wicki, Sun, & Bernauer, 2020; Zhang et al., 2016).

In terms of standard origin, British consumers do not differentiate between international or domestic schemes, but the origin should be indicated. In China, the average importance of the VSS origin is larger in comparison. International and domestic VSS are valued, with the former being preferred. Here we do not find evidence to support H4. In fact, this finding differs to a previous study on tea in China that shows the preference of consumers for the domestic organic tea standard over the US and Japanese counterparts (Yang et al., 2021). The difference might be attributed to our use of the term 'international', which has the connotation of 'multilateral' and can therefore contribute to the resulting valuation by our Chinese participants. Hence, our finding suggests that Chinese consumers believe international standard-setting processes are more trustful than those occurred domestically. In combination with the valuation of the standard sponsors, our study shows that Chinese consumers prefer international standards set by governments, namely rules set through intergovernmental processes. Although there is no such VSS in the tea sector, this finding sheds light on the credibility of intergovernmental standards perceived by Chinese consumers.

Knowing what matters to consumers is not only important at the design stage of new VSS, but also at the marketing stage. Our findings suggest that it is not worthwhile to communicate all VSS specifications to consumers in the UK, only standard cause and price are crucial. In comparison, it is more valuable to communicate more information on sustainability labels in

China. Due to the high valuation of the government as the standard setter, public campaigns about VSS are likely to increase consumer support in this context.

A nuanced and market-specific communication is also necessary if consumer characteristics are to be considered. The underlying abstract value system plays a minor role in determining consumer preferences in the UK. Instead, it is concrete sustainability concerns regarding the food sector that drive support for sustainability standards. The communication of specific sustainability issues related to a given food product is likely to be an effective strategy to increase the uptake of VSS in the UK. A more affective communication might be used when addressing environmental (UK) and social concerns (China) as in both countries the feeling of the warm glow is associated with the stringent level respectively.

Our study aims to develop a new agenda on consumer support for sustainability standards. Future studies need to further investigate consumers' preferences for VSS in different subgroups of individual characteristics such as socio-demographics, value orientations and even consumption habits. They might also explore potential mediators of consumers' preferences such as trust in different types of information to identify hidden mechanisms through which consumer support for VSS are conditioned. Lastly, consumer research on VSS needs to extend its focus towards bulk commodities associated with significant sustainability impacts such as soy and palm oil.

3.6 APPENDIX

Table A1. Socio - economic characteristics of sample (in %) compared to census data (in brackets)

	China	UK
Gender		
Female	49 (49)	52 (51)
Male	51 (51)	48 (49)
Age groups		
16 - 24 years	14 (14)	13 (14)
25 - 39 years	30 (28)	24 (25)
40 - 64 years	48 (44)	41 (41)
65 years and above	8 (14)	22 (20)
Level of education		
Junior high school or below/No qualification	1	3
High school or technical school/ Lower secondary education	7	17
Professional college/Upper secondary education	19	18
Undergraduate/A-Level	66	23
Master or PhD/ University degree	6	39
Income groups*		
Low income	6	27
Middle income	21	32
High-middle income	36	31
High income	37	10

*low income: < £18,999 (< RMB 90,000); middle income: £19,000–31,999 (RMB 90,000–125,999); high-middle income: £32,900–63,999 (RMB 126,000–198,999); high income: > £64,000 (> RMB 199,000).

Table A2. Multinomial logit result for the UK sample

Number of Respondents	905		
Iteration	Chi-Square	Fit Statistic (RLH)	
1	1172,89076	0,36146	
2	1193,39891	0,36197	
3	1193,42810	0,36197	
4	1193,42810	0,36197	
Log-likelihood for this model	-7357,23892		
Log-likelihood for null model	-7953,95297		
Difference	596,71405		
Percent Certainty	7,50211		
Akaike Info Criterion	14740,47784		
Consistent Akaike Info Criterion	14843,01373		
Bayesian Information Criterion	14830,01373		
Adjusted Bayesian Info Criterion	14788,70262		
Chi-Square	1193,42810		
Relative Chi-Square	91,80216		
Variable	Effect	Std Error	t Ratio
ENV-LEV1	0,21576	0,03429	6,29155
ENV-LEV2	0,04493	0,02348	1,91381
ENV-LEV3	-0,26069	0,03394	-7,68155
SOC-LEV1	0,19227	0,03417	5,62610
SOC-LEV2	0,06658	0,02338	2,84811
SOC-LEV3	-0,25884	0,03381	-7,65526
SAF-LEV1	0,37156	0,03471	10,70378
SAF-LEV2	-0,13043	0,02363	-5,51874
SAF-LEV3	-0,24112	0,03392	-7,10911
SET-GOV	0,01142	0,02262	0,50481
SET-NGO	-0,01588	0,02256	-0,70385
SET-BUS	0,00446	0,02230	0,20012
ORI-INT	-0,00088	0,02256	-0,03916
ORI-DOM	0,05887	0,02248	2,61864
ORI-NON	-0,05798	0,02252	-2,57510

PRI-LOW	0,55588	0,05374	10,34477
PRI-MED	0,15437	0,02462	6,26949
PRI-HIG	-0,71025	0,05399	-13,15493
NONE	-0,84504	0,03108	-27,18635

Table A3. Multinomial logit result for the China sample

Number of Respondents	919	
Iteration	Chi-Square	Fit Statistic (RLH)
1	3014,20252	0,40917
2	3252,60558	0,41586
3	3260,80043	0,41609
4	3260,81966	0,41609
5	3260,81966	0,41609
Log-likelihood for this model	-6446,58772	
Log-likelihood for null model	-8076,99755	
Difference	1630,40983	
Percent Certainty	20,18584	
Akaike Info Criterion	12919,17544	
Consistent Akaike Info Criterion	13021,91089	
Bayesian Information Criterion	13008,91089	
Adjusted Bayesian Info Criterion	12967,59973	
Chi-Square	3260,81966	
Relative Chi-Square	250,83228	
Variable	Effect	Std Error	t Ratio
ENV-HIGH	0,20330	0,03342	6,08282
ENV-MED	-0,04886	0,02319	-2,10668
ENV-LOW	-0,15444	0,03355	-4,60300
SOC-HIGH	0,13247	0,03334	3,97326
SOC-MED	-0,05420	0,02329	-2,32737
SOC-LOW	-0,07827	0,03354	-2,33348
SAF-HIGH	0,40013	0,03356	11,92267
SAF-MED	-0,14911	0,02315	-6,44096

SAF-LOW	-0,25102	0,03376	-7,43546
GOV	0,08866	0,02206	4,01922
NGOs	-0,08850	0,02211	-4,00337
BUS	-0,00016	0,02200	-0,00734
INT	0,12816	0,02229	5,74908
NAT	0,07479	0,02204	3,39301
NOT	-0,20295	0,02237	-9,07314
HIGH	-0,14390	0,05244	-2,74413
MED	0,08465	0,02446	3,46092
LOW	0,05925	0,05250	1,12847
NONE	-1,77552	0,04387	-40,47409

CHAPTER 4

4 WARM GLOW AND CONSUMERS' VALUATION OF ETHICALLY CERTIFIED PRODUCTS[14]

Sarah Iweala, Achim Spiller, Rudy Nayga, Dominic Lemken

ABSTRACT

A number of self-beneficial motives can trigger pro-environmental and prosocial behaviour of individuals. We focus on the role of the warm glow of giving – the personal benefit people experience when doing good irrespective of the consequences – in the valuation of ethically certified food products. Our data is based on an online experimental auction with more than 800 consumers in Germany. Participants bid on tea and chocolate advertised with prosocial and pro-environmental certifications after being randomly exposed to affectively and informatively framed messages. We also measured the experienced warm glow of participants. Our main results are (1) that the experienced warm glow is only linked to a higher willingness-to-pay of older and higher income respondents; (2) that the experienced warm glow does not differ between prosocial and pro-environmental causes; and (3) that treatment effects do not differ according to the participants' warm glow level but according to the certification itself.

[14] This manuscript is in similar form in the review process of the Journal Q Open (as of 14 March 2022).

The contributions of each author are as follows: All authors conceptualized the research. Data was gathered and compiled by Sarah Iweala (SI). SI analyzed and interpreted the data with the help of Dominic Lemken (DL). DL, Achim Spiller (AS) and Rudy Nayga (RN) assisted in the interpretation of results. The writing was done by SI. AS, DL and RN provided invaluable feedback and comments at different stages of the research and drafting of the paper. All authors read and approved the final manuscript.

4.1 INTRODUCTION

When consumers place items in their shopping cart, whether virtually or in an actual brick-and-mortar store, they are likely to consider a range of factors before making their choice. These factors might include their immediate and future needs, their budget constraints, available options, their mood and tastes, and many more. This list increases further if their choice set expands to also contain private goods that feature public good characteristics (i.e. impure public goods) (Kotchen, 2005).

Likewise analysing choices made by individuals that involve seeming selflessness involves a range of factors; for instance context (DeScioli & Krishna, 2013), extrinsic incentives (Eyting, Hosemann, & Johannesson, 2016), and intrinsic motives that may be based on pure altruism, status (Ariely, Bracha, & Meier, 2009) or personal beliefs. In our study, we focus on the feeling of the warm glow as a possible intrinsic motivation to purchase impure public goods, hereby referred to as ethically certified food products. The 'ethical' attribute may capture a broad range of aspects (e.g. organic, fairly traded, animal welfare, etc.) and refers to product characteristics that benefit others and the environment. This is in line with previous studies from different fields employing the term 'ethical' to include social and environmental aspects (Davies & Gutsche, 2016; Lades, 2014; Long & Murray, 2013). The warm glow is defined as a personal benefit that people receive when doing good irrespective of the consequences (Andreoni, 1990). It is applicable in our setting for two reasons. A warm glow feeling can sway the decision-making process in the moment because it results in an immediate increase in an individual's utility as evident in neuroscience (Harbaugh et al., 2007); and this increase occurs irrespective of the choices of others.

The market for ethically certified products is ever growing, and consumers' stated approval of such is well documented, but often the intentions of consumers are not put into action through what is known as the intention-behaviour gap (Lusk, 2018). Under the assumption that products with public good characteristics are beneficial for society and the environment, there is a need to close this gap. Much research exists on different ways to boost sustainable behaviour in general (White et al., 2019). Our study is situated within the literature that analyses self-interested rather than purely altruistic motives behind intended sustainable behaviour (Dominicis et al., 2017; Wang, Wang, Guo, Zhang, & Wang, 2018).

A few studies employ the warm glow concept in sustainability research (Dominicis et al., 2017; Hartmann et al., 2017; Liebe et al., 2011; van der Linden, 2018). In this study, we focus on consumers' valuation of products advertised with prosocial and pro-environmental claims and examine the warm glow on two levels: as a feeling experienced by consumers, and as a nudge in the form of an affective appeal that is juxtaposed with an informative appeal. We capture the warm glow experienced by the participants via tested statement batteries included in our questionnaire. We use affective and informative appeals as treatments, which are given to participants immediately before they evaluated the products. We thus build on previous studies showing that depending on the underlying individual motivation to do good, the

respective wording of an appeal could have varying effects on individuals' prosocial (Karlan & Wood, 2017; Whillans et al., 2017) or pro-environmental behaviour (Dominicis et al., 2017). The novelty of our study is that we test whether participants with already high levels of experienced warm glow are encouraged to value ethically certified products more with an affective appeal. Hence, we use warm glow as a measured concept and as a nudge in our set-up.

For this purpose, our study design involves a binding online experimental auction with more than 800 consumers in Germany. This allows us to analyse whether the willingness-to-pay (WTP) for ethically certified tea and chocolate is influenced by the experienced warm glow, affective appeals, or/and an interaction of both. We also account for possibly different effects depending on the claim's cause by employing prosocial and pro-environmental certification, whereas previous studies largely concentrated on either of these two areas of sustainable behaviour.

Our results suggest that warm glow has a positive effect on the WTP for products advertised with prosocial and pro-environmental claims but only when paired with increased age and income. The framing of the appeal makes no difference. In this regard, the ethical certification itself appears to be more important. Products advertised with the pro-environmental claim profited more from the appeals than those featuring the prosocial claim. We discuss possible explanations for this difference in the latter part of this paper. We start with our conceptual framework from which we derive our hypotheses, which is followed by our experimental design, our results, a discussion and concluding remarks.

4.2 CONCEPTUAL FRAMEWORK

The warm glow matters to many individuals when they donate and also when people indicate how much they value environmental public goods (Kahneman & Knetsch, 1992). For this context, Kahneman and Knetsch coin the term "*the purchase of moral satisfaction*" and show a strong link between the WTP and individuals' ratings of moral satisfaction. The authors, moreover, note that "*[t]he expenditure is an essential aspect of the consumption*" (ibid, p.4). In our study, we differentiate between a behavioural warm glow and an experienced warm glow. Specifically, we consider the measured experienced warm glow to be driving the actions of the behavioural warm glow (Ferguson & Flynn, 2016).

More recently, a connection has been established between the warm glow feeling and pro-environmental behaviour (Hartmann et al., 2017; Welsch et al., 2021), especially if pro-environmental behaviour is low in cost, such as turning off lights when not using them (van der Linden, 2018). A link between the warm glow and high-cost pro-environmental behaviour, such as home insulation or the purchase of green energy, is not proven in the same study (ibid). Assuming that purchase decisions made in a supermarket fall within the low-cost

bracket compared to, for instance, choices made in a car dealership, we derive our first hypothesis:

H1: The experienced warm glow generally has a positive effect on the WTP for food products advertised with ethical claims.

However, further research motivates us to add qualifiers to this general hypothesis in regard to socioeconomic aspects, even though studies linking socioeconomic variables to prosocial and pro-environmental behaviour present a mixed picture (Diamantopoulos, Schlegelmilch, Sinkovics, & Bohlen, 2003; Gifford & Nilsson, 2014; Gilg, Barr, & Ford, 2005). Nevertheless, we only focus on possible interactions between the feeling of the warm glow and socioeconomic variables; therefore, we only consider studies that measure the warm glow or relatable concepts. For example, Liebe and colleagues (2011) show in their study that the warm glow has a positive effect on whether or not participants are willing to pay for a public good but not on how much they are actually willing to contribute (once they indicated their WTP in principle). The study confirms the importance of income for the WTP for products advertised with ethical claims (here, environmental goods), similar to other studies conducted before and after (Ubilava, Foster, Lusk, & Nilsson, 2010; Vecchio & Annunziata, 2015). We, therefore, add the following qualifier:

H1a: The warm glow has a positive effect on the WTP for food products advertised with ethical claims when paired with increased income.

Additionally, research on old age and social preferences highlights a positive effect of the former on the latter (Kettner & Waichman, 2016). Studies focusing on pro-environmental preferences show that it is mostly in terms of behavioural measurements (not knowledge or attitudes) that increasing age has a positive effect (Diamantopoulos et al., 2003), even though the evidence is not entirely straightforward. Although the link between age and pro-environmental and prosocial behaviour is ambiguous, recent research has established a link between an increased emotional gain from doing good deeds in older adults (Bjälkebring, Västfjäll, Dickert, & Slovic, 2016). The experienced warm glow appears to become more pronounced with increased age, driving us to add the following qualifier:

H1b: The warm glow has a positive effect on the WTP for food products advertised with ethical claims when paired with increased age.

Likewise, possible gender differences in the feeling of the warm glow are not straightforward. A neurobiological study shows that the neural reward system in women appears to be more sensitive to prosocial rewards, such as the warm glow, than that in men, explaining why women act more prosocially (Soutschek et al., 2017). In line with this finding, experimental studies show that while often no gender differences occur when studying patterns of giving, women are more socially oriented under certain circumstances, e.g., when the price of giving is high (J. Andreoni & Vesterlund, 2001) or when donations are negatively framed (Fujimoto & Park, 2010). A field experiment of labour donations further shows that women rather than

men increase their efforts when faced with the warm glow treatment (Tonin & Vlassopoulos, 2010). On a different note, a recent empirical study finds that women tend to give less when an easy way to opt out of the giving request exists (DellaVigna, List, Malmendier, & Rao, 2013). This result is important when considering our own experimental set-up, which makes it easy (at no social cost) for our respondents to opt out. Taking the aforementioned studies into account, we arrive at the following qualifier:

H1c: In women, the warm glow has a positive effect on the WTP for food products advertised with ethical claims.

In addition to the effect of the measured experienced warm glow feeling on the WTP for products advertised with ethical claims and possible interactions with socioeconomic variables, we analyse whether we can employ the warm glow in the form of an appeal. For this purpose, we employ two differently framed appeals as treatments: one informative in nature and the other affective – to inspire warm glow feelings. We are interested in whether these appeals can increase the WTP and, more precisely, whether it is possible to observe an interaction of these treatments with the measured level of experienced warm glow. We hypothesize that individuals with a high level of warm glow are more responsive to affective appeals than to informative appeals, because the feeling of the warm glow can sway the decision-making process in the moment because it results in an immediate increase in an individual's utility as evidence from neuroscience shows (Harbaugh et al., 2007). Eliciting the warm glow via a nudge is believed to be beneficial due to the creation of immediate gratification. Moreover, when we follow the categorization of 'green' nudges as welfarian paternalistic nudges described by Becchetti et al. (2018) where *"…[the] suggested choice does not per se improve agent's wellbeing if the agent's choice is not followed also by similar choices by the other agents"* (ibid, p.2), then the utilization of the warm glow feeling as a nudge is superior because it leads to an increase in the agent's wellbeing irrespective of the choices of others.

We assume that this affective nudge works better for individuals who already exhibit high levels of warm glow because previous findings point in this direction. For example, Karlan and Wood (2017) differentiate in their study between *"…warm glow donors who respond negatively to analytical effectiveness information, and altruism donors who respond positively to such information"* (p.1). The idea is moreover in line with Singer's (2015) juxtaposition of effective vis-à-vis emotional altruists with the latter referring to warm glow. Additionally, there is evidence that tailoring messages to address the underlying motivations of individuals increases the perceived value of the intended prosocial behaviour (Whillans et al., 2017). Evidence for this phenomenon also exists in pro-environmental settings: depending on the message frame used (self-enhancing vs. self-transcending), participants increase their engagement in pro-environmental behaviour depending on their levels of self-interest and altruism (Dominicis et al., 2017). Notably, self-enhancing messages are found to work for both groups. It appears reasonable to believe that an affective appeal that highlights the personal

utility of a good deed is more persuasive for individuals who already claim to value this personal utility gain more, leading us to the following hypothesis:

H2: The warm glow interacts positively with the affective treatment used.

On a more general note, we also aim to identify whether differences occur depending on the ethical certification or if we can draw conclusions that hold for both cases. Existing research does not suggest that the role of the warm glow differs according to the cause. Studies have shown the effect of the warm glow on prosocial (Crumpler & Grossman, 2008; Ferguson, Taylor, Keatley, Flynn, & Lawrence, 2012) and pro-environmental (Hartmann et al., 2017; van der Linden, 2018) behaviour alike. Moreover, by definition, warm glow giving is motivated by the act itself and independent of the outcome. We, therefore, do not anticipate finding different effects in our study.

H3: The role of the warm glow does not vary between prosocial and pro-environmental claims.

4.3 DATA & METHOD

We design our experiment to compare the effects of different marketing messages on the WTP for food products advertised with ethical claims. The experiment is followed by a questionnaire used to assess the effect of participants' warm glow on the WTP. To obtain a relatively large set of participants, we conduct a binding Becker-DeGroot-Marshak (BDM) auction online with a sample size (before data cleaning) of 1006 participants in Germany. We choose to elicit the WTP of participants via a BDM because here the dominant strategy of participants is to reveal their true preference through their bids (Miler, Hofstetter, Krohmer, & Zhang, 2011). It is used extensively in studies with respect to food products (Canavari, Drichoutis, Lusk, & Nayga, 2019). Compared to other auction mechanisms, implementation of a BDM is possible on an individual level without the need of concurrent participation of others. This makes the BDM especially useful for an online study when it is logistically challenging for other participants to be present.

4.3.1 PRODUCTS & CLAIMS

In the online auction, we present two types of food products: a bar of chocolate and a box of tea. Each product is featured in two varieties – labelled with a Fairtrade or Rainforest Alliance claim. The Fairtrade label as certified by FLOCert constitutes a prosocial claim by adding value to the producers of coffee, cocoa, tea, etc. The Rainforest Alliance label is mostly a pro-environmental claim focused on improving the environmental sustainability of agricultural activities by setting standards and providing technical assistance to farmers. The two top Rainforest Alliance certified commodities are cocoa and tea as measured in cultivated areas

(Lernoud et al., 2017). Both products are found in the market with each respective claim (although from different brands).

For the purpose of our study, it is important to include only certifications that can be regarded as purely public good characteristics. For example, the organic claim has an alleged health benefit for some consumers (Gassler et al., 2016; T. Hansen, Sørensen, & Eriksen, 2018; Hughner et al., 2007) – therefore, a hedonic benefit for consumers on top of the product itself. In this case, the line between pure public good and private good characteristics is blurred, and any effect of the warm glow cannot be easily identified.

4.3.2 APPEALS

With the questionnaire, we measure the experienced warm glow levels via statement batteries, which are used similarly in previous studies (Hartmann et al., 2017; Liebe et al., 2011; van der Linden, 2018). In the auction, we additionally employ the feeling of the warm glow in the form of an appeal. In each auction, participants are presented with either an affective or an informative appeal or no appeal at all before placing their bid. To make the feeling of the warm glow easily accessible, the affective appeal is designed to appeal strongly to the emotions of the participants and directly address the participants. The effective appeal convey the same intent of the certification but with numbers and concise facts outlining the effectiveness of the Rainforest Alliance and Fairtrade programs instead of the direct appeal (see Figure 4-1 for wording and S1 in the supplementary material for all employed appeals).

Figure 4-1. Affective vs. informative appeal for Fairtrade certified chocolate (English translation)

This approach follows methodologies used for wording in previous studies. Karlan and Wood (2017) appeal in their study to potential donors of a charity by varying the wording used in a letter addressed to them: one version of the letter mentions the impact of the charity, and the other is more emotional and without including impact figures. The messages are conveyed in letters of comparative length. As grocery shopping is usually characterized by limited time and many external factors, our messages have to be brief and easy to understand. Whillans and colleagues (2017) employ in their study similarly short but varying appeals for charitable giving in an online setting. The authors show that only slight differences in wording can have varying effects on diverse people (in their case, depending on their level of wealth).

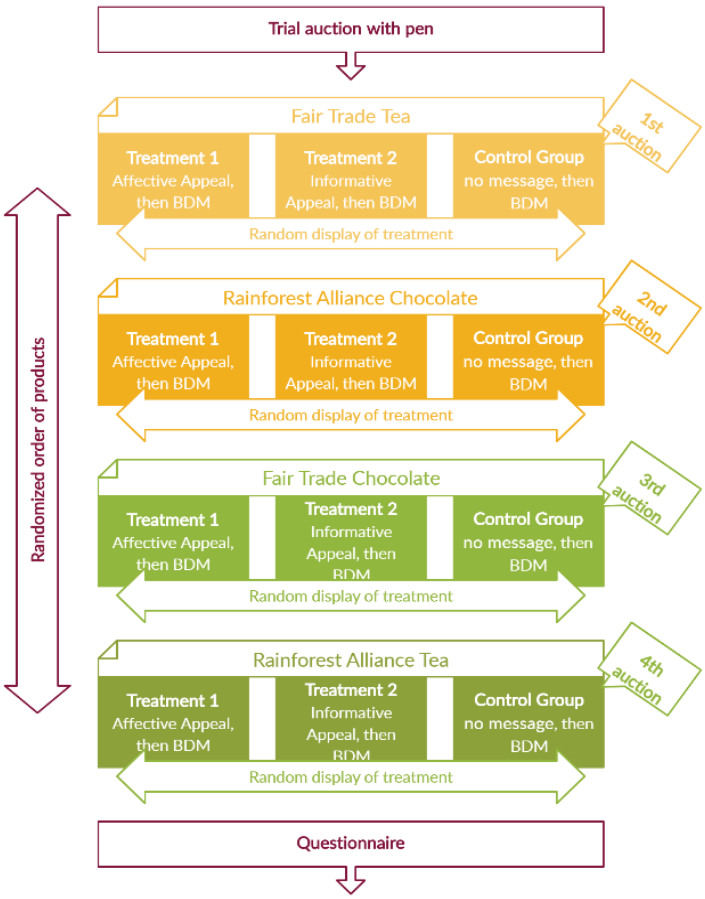
After reading the messages, the participants are presented with a screen showing a photo of the actual product, which is reduced to the product with a single label (see S2 in the supplementary material).

4.3.3 AUCTION MECHANISM

Prior to the bidding process, all participants are clearly informed of the details of the BDM mechanism and have to pass a quiz before proceeding with the auction (see supplementary online material for the instructions and quiz given to participants as well as a descriptive analysis of participants' quiz performance). Specifically, participants are told that they need to bid their maximum WTP and that if their bid exceeds or is equal to an unknown predetermined price, the participant purchases the product and pays the unknown predetermined price. If the participant's bid falls below the unknown predetermined price, the participant cannot purchase the product.

We, therefore, use a slightly adapted version of the traditional BDM. The secret bid is not randomly generated for each participant but predetermined by the experimenter; nonetheless, it is also unknown to the participant (Lusk, Fox, Schroeder, Mintert, & Koohmaraie, 2001). This specification is clearly communicated to participants in the instructions for the auction mechanism. The predetermined prices are based on a market analysis of both products and represent midrange prices.

Figure 4-2. Auction Design



After obtaining sociodemographic information from the subjects, the participants are randomly assigned to one of the four product treatments (Fairtrade certified chocolate, Rainforest Alliance certified chocolate, Fairtrade certified tea and Rainforest Alliance certified tea) and receive at random one of the three appeals (affective, informative and none) prior to

placing their bids.[15] This process is repeated four times until each participant has placed a bid for each of the four products (see Figure 4-2). The ordering of the products' presentation is randomized to account for possible order effects. After each bid, each participant receives a notification of whether their bid is higher than the predetermined bid, including a reminder that it still needs to be determined if this particular auction is to be binding. Out of the four auctions, only two are selected as binding[16], i.e. even if a participant places all four times a bid higher than the predetermined bid, they are only given the option to purchase two.

The auction was conducted over two weeks in November 2018 in cooperation with a market research company that also provided the panel of participants. Participants could pay via PayPal and credit card. We sent the auctioned-off products in mid-December by mail.

4.3.4 EMPIRICAL MODEL

To test whether our appeals influence the WTP for each product and whether potential interactions between the feeling of the warm glow and socioeconomic factors exist, we employed a Tobit regression (Drichoutis, Lazaridis, & Nayga, 2009; J. Y. Lee, Han, Nayga, & Lim, 2011; Lemken, Knigge, Meyerding, & Spiller, 2017). For the auction data, this approach is preferred because our dependent variable is censored at zero, as participants could not bid less than 0€, even though a negative WTP for consumer goods is possible (Bass, McFadden, & Messer, 2021). Hence, censoring at 0 is advised for auction data when the share of zero bids is high (Canavari et al., 2019; Drichoutis, Klonaris, & Papoutsi, 2017; Tepe, Benali, & Lemken, 2021).

Our outcome variable is *Bid* for product j by individual i. A_t stands for the affective appeal and I_t for the informative appeal. *X* represents a vector capturing the demographic characteristics (gender, age, income, education) and consumption level of individual i. *W* denotes the warm glow level of individual i. θ_1 denotes the interaction between warm glow level and treatments, θ_2 between other covariates *X* and the warm glow level *W*. ϵ_i is the error term.

$$Bid_{ji} = \alpha_0 + \alpha_1 A_{ij} + \alpha_2 I_{ij} + \beta_1 X_i + \beta_2 W_i + \theta_1 X_i (A_t + I_t) + \theta_2 X_i W_i + \epsilon_{ij}$$

(Estimation equation)

[15] Prior participants are asked to place a bid for a pen (without treatment). 433 participants placed a bid above 0€, with a median WTP of 1.00€ when only positive bids are included.

[16] The selection is made based on product availability, but communicated to participants to be random. We choose this wording as not to induce participants to wonder which of the auctioned products are actually available and adjust their bids accordingly. In order to elicit their true preferences for each product, the set-up was such that participants believed that it is equally likely to purchase any product. The experimental set-up and wording were approved by the ethics board of our university. (Whereas Fairtrade certified chocolate and Rainforest Alliance certified tea are available to buy in stores, the respective alternatives are designed by us.)

4.4 RESULTS

4.4.1 SAMPLE CHARACTERISTICS

After data cleaning[17] the age and gender structure of our sample is largely representative of the population in Germany (Table 4-1). In terms of education and income, the corresponding lower levels are underrepresented, which needs to be considered when going over the descriptive results. The geographic distribution of participants is mostly reflective of the census data. The rural and urban areas covered are also reasonably well matched; only small towns are notably underrepresented (9% lower). Please refer to Table S1 in the supplementary material for the geographic distribution. As differences of observables across treatment arms are slight and not statistically significant, we are confident that randomization was successful.

[17] Initially, 2005 participants started the survey, but approximately 50% declined to participate in a binding auction. Of the 1006 completed surveys, we retain 816 observations for the analysis after excluding speeders (i.e. participants who spent less than 1/3 of the median time on the survey) and straightliners (i.e. participants who show monotone answering behaviour in three or more statement batteries).

Table 4-1. Socio - economic characteristics, consumption levels and warm glow factor of full sample and treatment groups (in %) compared to census data

			Chocolate (FT)				Chocolate (RA)				Tea (FT)				Tea (RA)			
	Census	Sample	C	AA	IA	Prob > F	C	AA	IA	Prob > F	C	AA	IA	Prob > F	C	AA	IA	Prob > F
Gender						0.65				0.99				0.10				0.09
Female	51	48	51	45	47		49	47	49		48	49	48		50	46	50	
Male	49	50	49	54	52		51	53	50		52	50	51		49	53	50	
Other	n/a	0.4	0	0.7	0.4		0.3	0.7	0.4		0	0.4	0.1		0.1	0.3	0	
Age groups						0.59				0.84				0.25				0.53
18 - 27 years	16	13	14	13	12		12	13	15		14	14	11		11	13	15	
28 - 37 years	20	24	24	21	26		24	24	23		26	22	24		23	23	25	
38 - 47 years	20	21	19	22	23		22	24	18		20	19	25		19	26	19	
48 - 57 years	25	24	27	24	22		26	21	27		25	25	24		27	24	22	
58 - 67 years	19	19	15	19	17		16	19	17		14	21	18		19	14	19	
Level of education						0.21				0.23				0.12				0.72
No qualification	4	1	2	3	1		1	2	2		2	2	2		2	1	2	
Lower secondary education	35	13	13	12	13		16	11	12		12	15	11		13	12	13	
Upper secondary education	31	36	34	35	38		33	35	39		36	37	34		33	36	37	
Higher education entrance qualification	13	23	25	25	19		21	26	23		27	20	22		28	19	22	
University degree	17	26	26	25	27		29	26	24		23	26	29		24	29	25	
Other	n/a	1	0	.7	2		1	.7	.4		.3	0	2		.4	1	.4	
Income groups						0.92				0.71				0.12				0.33
Low income (< 1.3000€)	26	17	17	14	19		17	16	17		17	19	14		15	16	18	
Middle income (1.300 - 2.599€)	40	27	38	37	36		37	38	36		37	38	36		36	37	39	
High-middle income (2.600 - 4.999€)	27	35	33	38	33		33	35	37		33	29	41		39	33	32	
high income (> 5.000€)	7	11	11	11	12		13	11	10		13	13	9		9	14	11	
Chocolate consumption						0.66				0.71				0.69				0.78
Never/hardly ever		5	5	5	7		5	6	6		6	5	5		5	4	6	
Once or twice per month		20	20	21	18		22	19	19		20	17	23		22	19	19	
Once or twice per week		30	31	26	31		28	27	30		27	33	28		28	32	28	
A couple of times per week		46	44	48	45		45	46	46		47	45	45		45	45	47	
Tea consumption						0.42				0.63				0.89				0.37
Never/hardly ever		12	12	10	15		12	13	12		14	9	13		14	13	10	

Once or twice per month	20	23	18	18		23	16	20		20	19	20		20	20	19	
Once or twice per week	23	23	23	24		24	24	22		25	23	22		22	22	25	
A couple of times per week	45	42	49	44		42	46	47		42	49	45		44	45	46	
Warm Glow					0.80				0.98				0.10				0.29
Factor score (mean)	0.01	0.04	-0.02	0.01		0.02	0.00	0.01		-0.06	-0.02	0.11		0.09	-0.03	-0.02	
N	816	282	271	262		277	270	269		289	254	273		257	279	280	

Note 1. C=Control Group, AA= Affective Appeal, IA= Informative Appeal; Note 2. Source of Census data: Federal Statistical Office; Note 3. The Anova (p-value = prob > F) cannot reject the hypothesis of no significant differences across treatments at the 5%-level for all observables.

4.4.2 WILLINGNESS-TO-PAY

Overall, 251 bids for the Fairtrade certified chocolate are higher than the predetermined unknown bid of 1.99€ and 156 bids for the Rainforest Alliance certified tea are higher than the predetermined unknown bid of 2.49€. The participants were informed by e-mail about the auction outcomes and asked to pay the respective amount online. A reminder to pay was sent three times. However, only 41 bars of chocolate (16%) and 14 packs of tea (9%) were paid for and consequently mailed.

Table 4-2 presents the mean of all bids for each product. It should be noted that a substantial number of participants were not interested in the products and, therefore, chose to bid 0€. The share of 0€ bids is smaller for the bars of chocolate at 27.9% than for the packs of tea at 33%. This difference might be attributed to differences in consumption. Only 5.4% of participants report never consuming chocolate, whereas that number rises to 12.1% for tea.

The WTP for the Fairtrade certified chocolate in the full sample is highest following the affective appeal, also when excluding the 0€ bids. The WTP for Rainforest Alliance certified chocolate is in both cases the highest for the informative appeal. The same can be observed for Fairtrade and Rainforest Alliance certified tea, although the value is the same for affective and informative appeals for the full sample.

Table 4-2. Willingness-to-pay in Euro by treatment and product

Incl. zero bids	**Control**			**Affective Appeal**			**Informative Appeal**		
	Mean	**SD**	**% of 0-bids**	**Mean**	**SD**	**% of 0-bids**	**Mean**	**SD**	**% of 0-bids**
Fairtrade									
Chocolate bar	1.27	1.35	0.27	1.32	1.41	0.27	1.22	1.41	0.32
Tea	1.24	1.37	0.35	1.24	1.28	0.33	1.32	1.32	0.31
Rainforest Alliance									
Chocolate bar	**0.99**	1.26	0.35	**1.28**	1.29	0.27	**1.40**	1.46	0.23
Tea	**1.07**	1.20	0.38	**1.38**	1.44	0.29	**1.38**	1.54	0.31
Excl. zero bids									
Fairtrade									
Chocolate bar	1.73	1.30	n/a	1.80	1.35	n/a	1.79	1.38	n/a
Tea	1.89	1.28	n/a	1.87	1.14	n/a	1.91	1.17	n/a

Rainforest Alliance									
Chocolate bar	**1.53**	1.28	n/a	1.74	1.20	n/a	**1.82**	1.42	n/a
Tea	1.73	1.10	n/a	1.95	1.34	n/a	2.00	1.48	n/a

Note 1. Postdoc comparisons using Turkey's HSD show a statistically significant difference in the mean-WTP between both treatment groups and the control group incl. zero-bids for the Rainforest Alliance chocolate, control vs. affective p=0.029 and control vs. informative p=0.001, and the Rainforest Alliance tea, control vs. affective p=0.027 and control vs. informative p=0.028. Note 2. Postdoc comparisons using Turkey's HSD show a statistically significant difference in the mean-WTP between one treatment group and the control group excl. zero-bids for the Rainforest Alliance chocolate, control vs. informative p=0.062.

When comparing the percentage of 0€ bids per product, a higher rate is observed when no appeal is presented to participants. Again, the Fairtrade chocolate is the exception, showing a comparatively low 0€ bid percentage in the control group. Rainforest Alliance chocolate shows the largest drop in 0€ bids between the control and treatment groups.

Figure 4-3. Bids for Fairtrade certified chocolate and Rainforest Alliance certified tea

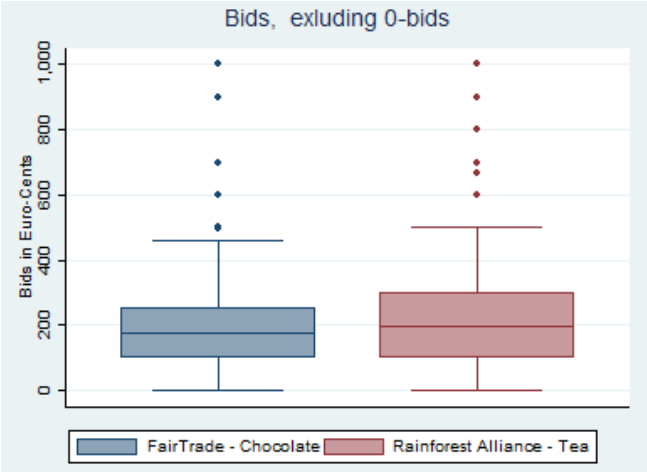


Figure 4-3 shows that 50% of the bids for the Rainforest Alliance certified tea fall between 1€ and 3€ and 50% of the bids for the Fairtrade certified chocolate between 1€ and 2.50€. Comparing our results to market prices suggests that the emerging WTP values are reasonable.

4.4.3 EXPERIENCED WARM GLOW

The answers to the questionnaire are analysed with a principal component analysis (PCA) to narrow down the statement batteries to the core premise of the concept. Conducting a principal component analysis achieves this reduction in dataset dimensionality while retaining most of the variance (Jolliffe, 2002). As a result, a new variable is created: the principal component 'warm glow', which is uncorrelated and preserves most of the variance (ibid). In the subsequent inferential statistical analysis, we use this principal component as an independent variable. The PCA reveals a single warm glow component combining environmental and social aspects (Table 4-3).[18]

[18] We measure the level of experienced warm glow after treatment and auction. In order to make sure that the treatment did not influence the level of experienced warm glow, we conduct postdoc comparisons but do not detect differences in warm glow levels across groups (cf. Table 4-1).

Table 4-3. Results of principal component analysis of warm glow statements (N=816)

Cronbach's alpha: 0.8880	Mean	SD	Factor loading
Doing something to combat the deforestation of rain forests gives me a pleasant feeling of personal satisfaction.	3.33	1.16	0.8096
When I help preserve biodiversity, I feel happy that I have contributed to the functioning of our ecosystem.	3.55	1.07	0.8311
I am pleased with myself whenever I contribute towards protecting the environment.	3.66	1.04	0.8321
I am pleased with myself when I contributed to a fair society.	3.60	1.00	0.8118
Doing something about social injustice gives me a pleasant feeling of personal satisfaction.	3.67	1.07	0.7491
Participating in programs aiming at fair compensation for farmers/workers gives me satisfaction and a sense of giving back to society.	3.54	1.01	0.7742

Note 1. Scale from 1 'not true of me at all ' to 5 'extremely true of me'; Note 2. Kaiser-Meyer-Olkin measure of sampling adequacy: 0.9048.

4.4.4 TREATMENT EFFECTS

Prior to the analysis, the independent variables were standardized such that effect sizes are comparable. Table 4-4 presents the results of the Tobit regression for each product. Regarding treatment effects, both appeals have positive and statistically significant effects on the WTP for both Rainforest Alliance certified products. The effect is slightly larger for the Rainforest Alliance certified chocolate. No treatment effects occur for the Fairtrade certified products. Regarding the experienced warm glow, we observe a negative effect on all products. When interacting the experienced feeling of the warm glow with each treatment, we do not find a statistically significant effect on the WTP for any product.

For the socioeconomic variables, a strong negative and statistically significant effect of age on the WTP for all products is apparent, but turns into a statistically significant positive effect when interacted with the feeling of the warm glow. This effect as well as the interaction can be observed for age group 4 (48-57 years) and age group 5 (58-67 years). The higher income groups tend to have statistically significant positive effects on the WTP. When income is interacted with the experienced warm glow, a positive effect on the WTP is observed. This interaction is statistically significant for income group 3 (2.600-5.000 € a month) and income group 4 (more than 5.000 € a month) for the WTP for three out of four products. Gender (here,

being female) has a negative effect on the WTP for all products, this effect is statistically significant twice. When interacted with the experienced warm glow, this negative effect disappears. The interaction is, however, not significant. We also include education in our model. The results show that the level of education has no statistically significant effect on the WTP for any product. The interaction of education with the feeling of the warm glow has a statistically significant negative effect on the WTP for Rainforest Alliance chocolate. The other included covariate, consumption, is positively tied to the WTP for all four products. The more participants consume tea or chocolate, the higher their WTP for the respective products.

Table 4-4. Tobit regression results for each product

	FT chocolate	FT tea	RA chocolate	RA tea
Treatment: Affective Appeal	-0.866	3.921	19.02***	17.68**
	(7.264)	(7.401)	(7.051)	(8.017)
Treatment: Informative Appeal	-7.216	8.618	29.09***	16.02**
	(7.277)	(7.410)	(7.117)	(7.998)
Warm Glow	-55.49**	-85.38***	-57.01**	-77.65***
	(24.23)	(24.66)	(23.24)	(25.74)
Warm Glow # Treatment: Affective Appeal	6.068	3.056	-3.313	1.899
	(7.450)	(7.464)	(7.290)	(8.190)
Warm Glow # Treatment: Informative Appeal	2.130	-2.812	2.722	-0.563
	(7.791)	(7.683)	(7.216)	(8.295)
Income group 2: 1.300 - < 2.600 € a month	30.14	36.99*	10.76	21.76
	(19.79)	(20.18)	(18.91)	(21.08)
Income group 3: 2.600 - < 5.000 € a month	41.95**	38.68*	17.86	38.29*
	(21.15)	(21.61)	(20.19)	(22.55)
Income group 4: 5.000 € a month and more	58.95**	43.72	41.36	35.25
	(27.14)	(27.53)	(25.81)	(28.87)
Warm Glow # Income group 2	-2.914	18.31	25.01	32.48
	(19.62)	(20.06)	(18.75)	(20.85)
Warm Glow # Income group 3	25.93	59.76***	62.03***	69.69***
	(21.59)	(22.17)	(20.75)	(23.08)
Warm Glow # Income group 4	14.99	47.56*	68.64***	63.18**
	(25.97)	(26.48)	(24.93)	(27.78)
Gender	-7.840	-16.22**	-9.297	-12.82*
	(6.580)	(6.710)	(6.344)	(7.041)
Warm Glow # Gender	2.196	3.980	0.736	2.859
	(6.426)	(6.544)	(6.129)	(6.766)
Age group 2: 28 - 37 years	-35.40	-48.08**	-29.80	-37.93
	(23.72)	(24.11)	(22.78)	(25.05)
Age group 3: 38 - 47 years	-20.58	-36.79	-49.19**	-46.61*
	(22.44)	(22.79)	(21.61)	(23.77)
Age group 4: 48 - 57 years	-106.1***	-111.6***	-106.7***	-125.8***
	(24.17)	(24.59)	(23.18)	(25.71)
Age group 5: 58 - 67 years	-81.64***	-102.9***	-98.09***	-106.8***
	(25.42)	(25.93)	(24.41)	(27.07)
Warm Glow # Age group 2	9.832	25.28	-17.30	-17.23
	(24.39)	(24.78)	(23.46)	(25.73)
Warm Glow # Age group 3	42.99*	32.09	3.896	3.052
	(22.05)	(22.40)	(21.26)	(23.21)
Warm Glow # Age group 4	93.88***	88.23***	62.64**	61.35**
	(25.69)	(25.99)	(24.59)	(27.10)
Warm Glow # Age group 5	65.41**	85.73***	40.93*	73.60***
	(25.42)	(25.77)	(24.25)	(26.65)
Education	0.568	-8.105	0.626	-5.133
	(6.980)	(7.089)	(6.741)	(7.444)
Warm Glow # Education	1.190	-5.433	-14.70**	-10.06
	(7.176)	(7.245)	(6.901)	(7.555)
Consumption	21.63***	12.59*	19.20***	24.21***
	(7.155)	(7.230)	(6.843)	(6.672)
Constant	59.55**	84.61***	89.85***	74.06**
	(29.73)	(30.07)	(28.31)	(30.10)
N	810	811	811	811

Notes. Fairtrade chocolate: 231 left-censored, Fairtrade tea: 269 left-censored; Rainforest Alliance chocolate: 232 left-censored, Rainforest Alliance tea: 267 left-censored; for all model specifications: Prob > Chi2 = 0.0000; robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

4.5 DISCUSSION

Our results generally suggest that a higher warm glow level does not automatically translate into a greater WTP for food products advertised with ethical claims, at least in our experimental online auction. We therefore cannot confirm our first hypothesis (H1) *("The warm glow generally has a positive effect on the WTP for food products advertised with ethical claims"*). However, a closer look at our results shows evidence for our qualifying hypotheses, especially with respect to interaction effects between the warm glow and income and age. As presented above, income tends to have a positive effect on the WTP for all products, which is supported by previous studies (Liebe et al., 2011; Vecchio & Annunziata, 2015). When an increased income is paired with a higher level of experienced warm glow, we observe a positive effect on the WTP that is non-existent when we look at the warm glow in isolation. We regard this finding as supportive of the argument that the experienced warm glow must be analysed with caution, as it might only add to an inflated WTP when measured purely hypothetical (Nunes & Schokkaert, 2003), in contrast to the binding nature of our study. For experienced warm glow to spur good deeds, it must be backed up with the necessary income, at least when such good deeds involve spending money.

We find evidence for hypothesis H1a, *"The warm glow has a positive effect on the WTP for food products advertised with ethical claims when paired with increased income,"* and the qualifier *"…with increased age"* (H1b). The effect size of the interaction between age and the feeling of the warm glow on the WTP is comparatively large, especially when considering that age itself has a strong negative effect. On the one hand, our finding corroborates the aforementioned literature showing that prosocial behaviour increases with age and even more so research showing that people of advanced age receive greater emotional benefit from performing good deeds. On the other hand, our findings suggest that older age alone is not sufficient, as the inherent feeling of the warm glow is a prerequisite. We can, hence, not conclude that targeted marketing to the older population in general will increase the market share of products that are ethically certified but that great potential lies with the older population with inherently high levels of experienced warm glow.

The strong negative effect of age itself on the WTP might have been amplified by our online set-up. Research shows that even though online shopping is generally not negatively influenced by increased age (Hernández, Jiménez, & José Martín, 2011; Lissitsa & Kol, 2016), first studies on online grocery shopping illustrate that age matters (Bryła, 2018; Etumnu, Foster, Widmar, Lusk, & Ortega, 2019). One study finds the percentage of consumers reporting previously shopping online for groceries to decrease with age (Etumnu et al., 2019).

Our qualifying hypothesis regarding the interaction between being female and the warm glow cannot be confirmed. Being female shows a tendency toward a lower WTP for ethically certified products. However, there is a tendency for women's WTP to be more dependent on the warm glow than men's WTP, though the difference is not significant. Despite this lack of significance, the reversal of signs serves as an indication that fits well with the aforementioned literature. When social costs of opting out are low, women tend to behave less prosocially

(DellaVigna et al., 2013), which we can partially observe from the effect of gender in isolation and by comparing mean-WTP of women and men in our study (see Table S6). Not bidding or leaving small bids comes with no social costs in an anonymous online setting such as that used in our auction. However, once a participant has a higher level of experienced warm glow, these social costs are no longer non-existent upon opting out. This principle is supported by the finding that women appear to be more sensitive to prosocial rewards (Soutschek et al., 2017).

Overall, our results suggest that the warm glow on its own is not a good indicator for the WTP for ethically certified products. Ascribing high levels of experienced warm glow to a higher WTP – or more generally, to more prosocial or pro-environmental behaviour – can be misleading and might contribute to the measured gap between intention and behaviour, as higher levels of warm glow might suggest more behaviours that supposedly lead to the warm glow but are evidently not implemented. Our study shows that such a simple relationship does not exist. However, in combination with socioeconomic factors, especially increased income and increased age, a warm glow can be a good indicator of more prosocial or pro-environmental behaviour.

In addition, our study shows that the experienced feeling of the warm glow cannot simply be activated by specifically framed messages. Our affective appeal vis-à-vis our informative appeal does not result in larger effects when interacted with the experienced warm glow level of our participants. We, therefore, cannot confirm our second hypothesis: *"The warm glow interacts positively with the affective treatment"* (H2). This hypothesis is based on existing evidence showing that wording in messages can be used to appeal to the underlying motivation of individuals to reduce motivational conflict and increase donations, e.g., communal versus agentic appeals (Whillans et al., 2017) or letters with effective content versus those with more affective content (Karlan & Wood, 2017). Dominicis and colleagues' (2017) finding that a message frame built on self-enhancement appeals to altruistic and self-interested individuals alike serves as an indicator, why we do not find an effect of the interaction between warm glow levels and the affective appeal. The warm glow and from this our affective appeal is based on ideas of self-enhancement, which might appeal to most participants irrespective of their experienced level of the warm glow. However, our informative appeal has very similar effects and is not based on self-enhancement but on self-transcendence (in line with the terms used by Dominicis et al., 2017). Overall, we do not have a definitive reason as to why the hypothesized interaction between the warm glow and the affective appeal does not appear. Other hidden mechanisms might be responsible, such as motivational crowding-out (Frey & Jegen, 2002), i.e. intrinsic preferences of an individual are negatively affected by extrinsic incentives, resulting in a reduction rather than an intended increase in motivation.

The other focus of our study is to determine whether different effects are observed with respect to the ethical certification. Based on our results, we find evidence for hypothesis (H3a) *"The role of the warm glow does not vary between prosocial and pro-environmental claims."* Despite including specific prosocial and pro-environmental items in our warm glow

measurement, the principal component analysis revealed only a single warm glow component – combining both types of statements. In the Tobit regression, this experienced warm glow does not have different effects on the WTP for Fairtrade and Rainforest Alliance certified products. This result is of interest because the vast majority of studies concentrate on either pro-environmental or prosocial purchasing behaviour. Despite the lack of comparable empirical data, this finding is conceptually sound because warm glow givers are characterized as emotional givers who do not care greatly about the consequences of their good deeds; hence, the cause is less relevant overall. Our results, therefore, provide evidence that the experienced warm glow matters for pro-environmental and prosocial purchases alike when paired with increased age and income.

Nonetheless, in terms of treatment effects, we find differences between the pro-environmental and prosocial claims. We argue that this result has less to do with the social or environmental character of the certification but with the different awareness and initial knowledge of the participants. Previous studies show that both labels are known in the German population; however, misperceptions of the Rainforest Alliance label persist (Grunert et al., 2014). Consumers associate its frog symbol with protecting rare animal species in rainforests rather than with promoting sustainable agriculture (ibid). This misperception does not exist for the Fairtrade label. Therefore, we may understand the stronger effects of the treatments on the products advertised with the pro-environmental claim as an information effect. The participants receive new information about the certification, which increases their WTP. The effect of information on the WTP is shown in several food studies (Lange, Combris, Issanchou, & Schlich, 2015; McFadden & Huffman, 2017). As German consumers are more familiar with the Fairtrade certification, this effect may not apply.

On a more general note, this result highlights the importance of consumers' general knowledge about a certification for increasing their WTP for the respective product. The Rainforest Alliance certified products benefit from the treatments used in our study, which becomes especially apparent when we remind ourselves of the mean-WTP (Table 4-2). In the control group, the WTP for the Rainforest Alliance certified products is just around 1€, and the WTP for the Fairtrade certified products reaches 1.24€ (tea) and 1.27€ (chocolate). While the increase is negligible for the Fairtrade products in the treatment groups, a comparatively large increase of up to 41 cents is found for the Rainforest Alliance products.

4.6 CONCLUSION

Our results imply that even though the experienced warm glow plays a role in the valuation of ethically certified products by consumers, this is not a generalizable observation. It matters however for some socioeconomic subgroups; e.g. it can motivate higher income or older consumers to pay for ethical claims. Hence, marketing efforts could be channelled towards them. Such efforts might focus on increased exposure rather than on employing messages to appeal to their warm glow tendencies given that our affective appeals do not result in a

significant activation of their warm glow. The simple recommendation to appeal to consumers' warm glow to decrease the intention-behaviour gap in ethical shopping behaviour is not suitable as the effects of our affective treatment show. Therefore, in contrast to previous findings, we cannot confirm that frames are generally able to activate underlying motivations. On a more general note, our findings imply that advertisement in the form of marketing messages, irrespective of the framing, can be more suitable for certifications that are not yet well-established in the market. At least in our study, established certifications like Fairtrade do not profit from such, whereas the uptake of lesser known certifications can benefit from simple marketing campaigns.

Certainly, our results must be interpreted with caution because we could not fully enforce the binding nature of the auction; only a fraction of participants paid even though their bids exceeded the predetermined bid. The revealed WTP may thus be skewed upwards due to overbidding based on possible hypothetical bias and/or misunderstanding of the auction mechanism. We, therefore, compared bids by paying and non-paying participants (see Table S5). When only comparing bids above the pre-determined prices, we find a statistically significant higher mean-WTP for Fairtrade chocolate and Rainforest Alliance tea in the group of participants that did not pay (Panel A in S5), suggesting overbidding for these products. When comparing all positive bids, we find a statistically significant lower mean-WTP for the group that did not pay (Panel B in S5). The same holds when comparing all bids including zero bids (Panel C in S5). Overall, these comparisons suggest possible overbidding when participants do not perceive the auction as binding, even though it does not appear to be systematic. Yet, as illustrated previously in Table 4-2, a considerably large percentage of participants bid 0, indicating that they understood that they can bid 0 if not interested as well as the auction mechanism in general. The hypothetical approach of some participants does not necessarily mean that our treatment effects are not valid assuming that some biases uniformly existed across the treatments, since we are mainly interested in the differences of WTP among products and treatments and not the absolute WTP. Other factors such as limited payment options might have contributed to the share of non-paying participants ex-post and not because they initially did not intend to pay. A reluctance to purchase food online might have also played a role, especially for older participants (Etumnu et al., 2019) or participants with no previous experience. The lack of capturing participants' preferences and former experiences with such is a further limitation of our study.

This is the first study to test the role of the warm glow in relatively low-cost food context. Surely, our understanding of possible activations of the feeling of the warm glow to increase daily sustainable behaviour would benefit from further empirical evidence, especially if complemented by methods based on neuroscience to identify precise neural responses to stimuli.

CHAPTER 5

5 INFORMATION SOURCE AND CONTENT – DRIVERS FOR CONSUMERS' VALUATION OF FAIRLY TRADED FOODS[19]

Liza von Grafenstein, Sarah Iweala, Anette Ruml

ABSTRACT

To learn about the role of information content and source as catalysts to increase consumers' valuation of fairly traded foods, we conducted an online survey with 2,500 consumers representative of the German population. Within the online survey, respondents were randomly assigned to one of five information treatments or the control group. We employ the contingent valuation approach to measure the willingness-to-pay (WTP) premium for chocolate with the Fairtrade label compared to similar conventional chocolate. To estimate WTP and the outcome which measures the participants' purchasing intentions, we use ordinary least squares and interval regressions. We find that German consumers are willing to pay a high price premium for a Fairtrade label despite limited knowledge about the certification. This WTP is relatively robust to additional supportive information provision irrespective of the information source. However, the broader measure of behaviour, the purchasing intention, can rise due to information provided by a retailer or the government. While a supportive statement by a university does not seem to incentivize the valuation of Fairtrade certified chocolate, we find that an unsupportive (zero effect) statement of the same source can discourage the purchasing intention. Our findings imply that policymakers and scientists need to mind the risk of generalized science communication and create information campaigns to increase purchasing frequency.

[19] This manuscript is in similar form under review at the Journal of Cleaner and Responsible (as of 14 March 2022). It is further published as a SustainableFood Discussion paper: Von Grafenstein, L., Iweala, S., & Ruml, A. (2021). Information Source and Content – Drivers for Consumers' Valuation of Fairly Traded Foods. SustainableFood Discussion Paper 1, University of Goettingen. www.uni-goettingen.de/sustainablefood

The contributions of each author are as follows: All authors conceptualized the research. Data was gathered by all authors. Liza von Grafenstein (LVG) analyzed, interpreted and visualized the data. Anette Ruml (AR) and Sarah Iweala (SI) assisted in the interpretation of results. The writing was done by all authors. All authors provided invaluable feedback and comments at different stages of the research and drafting of the paper. All authors read and approved the final manuscript.

5.1 INTRODUCTION

Labour conditions in the agricultural sector of the Global South are hazardous and up till today often characterized by forced and child labour, poor working conditions, and low income (see NORC, 2020 for a recent assessment on cocoa production). The agricultural sector accounts for the largest share of child labour, 70% or 108 million children in absolute terms (ILO, 2017). A hotspot of child labour is cocoa production in West Africa (ILO & UNICEF, 2021). In the most relevant cocoa-exporting countries, Ghana and the Ivory Coast, 1.56 million children were involved in child labour in 2018/19 (NORC, 2020). On the other side of the value chain, consumers in the Global North consistently state their preference for fair labour standards and fairly traded products, but consumption rates of such remain low (Lusk, 2018). Despite continuous global growth, Fairtrade certified products account for only 1.7% of the total market in Switzerland and 1.5% in Sweden that are among the countries with the highest shares (Willer & Lernoud, 2018). While consumer characteristics influencing the purchasing intention of fairly traded products are widely examined in the existing literature (Arnot, Boxall, & Cash, 2006; Brunner, 2014; Pelsmacker et al., 2005; Vecchio & Annunziata, 2015), the role of information content and source as catalysts to increase consumers' valuation of fairly traded foods is not well established.

The provision of information per se affects consumers' valuation or behaviour regarding food in general (Cecchini, Torquati, & Chiorri, 2018; Gifford & Bernard, 2006; White et al., 2019) and food with sustainability features in particular (Bullock et al., 2017; Chrysochou & Grunert, 2014; d'Astous & Mathieu, 2008). For example, Disdier and Marette (2012) elicit the WTP for seafood products of either regular, environmentally friendly, or fairly traded features after several information treatments. They find that the WTP for fairly traded labelled products increases after a brief and even more after additional information. Nevertheless, evidence of information affecting consumers purchasing behaviour is mixed: Andorfer and Liebe (2012) find no effect of information on purchases of fairly traded coffee in a field experiment.

Further, little is known about how the source of information itself affects consumers' product evaluation. Here, we analyse the effect heterogeneity between credible sources of information such as the government and less credible sources like interest groups that potentially provide consumers with sustainability information (e.g. Aschemann-Witzel & Grunert, 2015; McFadden & Huffman, 2017; Rousu, Huffman, Shogren, & Tegene, 2007). Thus, our first research question contributes to the existing literature by asking *"Does the effect of information on the valuation of fairly traded products differ across information sources?"*. Our study covers important actors in the supply chain as the sources of the information: certification agencies, governments, research institutions, and retailers.

We further address a second research gap: the role of the information content, in particular the key statement. Information treatments in previous studies either carry supportive or unsupportive effect statements regarding the features of a food product. Results are mixed as some authors find similar effects on consumers' attitudes and behaviours for supportive and

unsupportive information (Aktar, 2013; Disdier & Marette, 2013), larger effects for unsupportive information (Fox, Hayes, & Shogren, 2002; Rousu et al., 2007), larger effects for supportive information (Disdier & Marette, 2012; Gifford & Bernard, 2006), or no effects (Waldman & Kerr, 2018). In studies with only unsupportive and neutral information treatments, the unsupportive information affects consumers' attitudes negatively (Aschemann-Witzel & Grunert, 2015; Müller & Gaus, 2015). Our study broadens the evidence of unsupportive and supportive effect statements on consumers' valuation of sustainable foods by using the same information source for supportive and unsupportive effect statements. Only Aktar (2013) uses the same explicitly named information source for both types of information. He shows that companies' positive or negative disclosure of ethically questionable business practices increases consumers' WTP compared to non-disclosure. To the best of our knowledge, no evidence exists in the context of science communication. Science usually serves as a source of descriptive information (Aschemann-Witzel & Grunert, 2015; McFadden & Huffman, 2017; Rousu et al., 2007) or explicitly supportive information for technological change (Fox et al., 2002). Against the backdrop of increasing efforts in science communication (Weingart & Joubert, 2019), it is important to study the unintended consequences of the communication of scientific study results to a broader public (Blanton & Ikizer, 2019). Thus, our second research question asks, "*Does an unsupportive effect statement compared to a supportive effect statement communicated by the same academic source affect consumers' valuation of fairly traded foods differently?*". When using the same information source for supportive and unsupportive statements about the intended welfare effect of an ethical label, we identify whether the source or the effect statement drive changes in consumers' valuation of fairly traded foods.

Aside from the treatments, we are interested in the initial knowledge of consumers about the certification, and whether it plays a role in their valuation of the certified product. Previous research indicates that consumer knowledge in the EU depends on the label; the Fairtrade label is correctly associated with its sustainability claim (Grunert et al., 2014). Yet, most studies capture only whether consumers can identify the Fairtrade certification correctly and not how much consumers know (e.g. Rousseau, 2015). Thus, we contribute to the literature in a three-fold way by (1) assessing the role of consumers' initial knowledge of Fairtrade, (2) comparing four different information sources (certification agency, government, research institution, retailer) and (3) contrasting supportive and unsupportive statements about the intended welfare effects of sustainability certification by a research institution.

To test our questions empirically, we conducted an online survey with a sample of 2,500 consumers in Germany in November 2020. The participants were randomly assigned to five information treatments and the control group. We use the contingent valuation approach to measure the participants' WTP for the premium of chocolate with the Fairtrade certification compared to similar conventional chocolate. A related outcome captures the participants' purchasing intention of Fairtrade certified products in the future.

Our results show that German consumers are generally willing to pay a high price premium for Fairtrade certification despite limited knowledge about the label, i.e. the expected means of WTP premium range between 47 and 56 Euro-cents. Additional information does not increase the participants' WTP but their purchasing intention. Further, treatment effects differ by information sources. When the retailer or the government provide the information, the participants' purchasing intentions rise. While we provide no evidence that a supportive statement by the university can incentivize the valuation of Fairtrade certified chocolate, we find that an unsupportive (zero effect) statement by the same source can discourage the purchasing intention.

5.2 DATA AND METHODS

5.2.1 STUDY DESIGN: RANDOMISED CONTROLLED TRIAL WITH INFORMATION INTERVENTION

To assess how information about the certification affects the valuation of fairly traded foods, we conducted a randomised controlled trial with five treatment arms and one control group that did not receive any information. As listed in Table 5-1, participants in the treatment arms looked at information leaflets (Figure A1-A5 in the appendix) that differed either in the source of information (1-4) or the effect statement (3 vs 5).[20]

Table 5-1. List of information treatments

	Source	Source represented by	Effect statement about intended welfare effect of the Fairtrade certification
1	Certification agency	Fairtrade	supportive
2	Government	German Ministry for Development and International Cooperation	supportive
3	Research institution	University of Göttingen	supportive
4	Food retailer	EDEKA	supportive
5	Research institution	University of Göttingen	unsupportive

Leaflets in all treatment arms refer to Fairtrade certified cocoa in the Ivory Coast because of the high prevalence of human rights violations in cocoa production in West Africa (ILO & UNICEF, 2021; NORC, 2020). For the different sources, we selected actors in the value chain of cocoa that could share sustainability information with consumers. For the varying

[20] This leads to a less realistic format for the university but ensures that other features like the format of the message would not affect consumers' perception of the information and, hence, their valuation of fairly traded foods.

statement of the intended welfare effect of the Fairtrade certification, we claim that a new study finds that certification either improves (supportive) or does not improve (unsupportive) income and working conditions. The unsupportive effect statement does not state that certification impairs income and working conditions but a zero effect. The effect statement differs for the research institution only because it is the most likely to publish zero effects based on scientific evidence, as compared to the other actors. We debriefed the participants at the end of the survey to clarify that the leaflets are designed and issued by us. We did not provide further information regarding the welfare effects of Fairtrade certification because they are heterogeneous across case studies and study foci (e.g. Maertens, 2019; Meemken, 2020; Sellare et al., 2020).

5.2.2 DATA AND SAMPLING

The study sample is based on the responses of 2,500 consumers in Germany, who participated in the online survey carried out by the panel provider Respondi, in November 2020. To reflect the socio-demographic structure of the German population, we set a quota for age, gender, education, and income.

Germany is an ideal setting for our study because a large share of consumers states their preference for sustainable foods (BLE & BÖLW, 2019). Further, the awareness of Fairtrade certification is relatively high and product availability is no constraint (Iweala et al., 2019; TransFair, 2021; Willer & Lernoud, 2018). German consumers also value the communication of pro-social aspects of foods (Ghvanidze, Velikova, Dodd, & Oldewage-Theron, 2017). Therefore, consumers in Germany make up a suitable sample to analyse other factors playing a role in the willingness-to-purchase, such as the role of information source and effect statement.

5.2.3 OUTCOME MEASURES

5.2.3.1 WTP MEASURE

We apply the contingent valuation method using an iterative price list to measure the hypothetical WTP for the Fairtrade certification. Contingent valuation is suitable for capturing the price premium that a consumer is willing to pay for one additional product attribute (here the certification) when prices for that attribute are non-existing in the marketplace (Liebe, 2007). It is the most widely used stated preference method for eliciting WTP in the context of organic food consumption (Katt & Meixner, 2020). The key valuation question was posed to participants as follows:

"The next time you go shopping, you are standing in front of the chocolate shelf. You are faced with the choice between a 100 g bar of chocolate with a Fairtrade label or a similar bar of chocolate without a Fairtrade label. How much more would you be willing to pay for a bar of chocolate with a Fairtrade label, compared to a similar chocolate bar without a Fairtrade label?"[21]

As respondents chose between a 100 g bar of chocolate of an unknown brand and flavour with and without a Fairtrade certification, the choice experiment and the phrasing of the question allowed us to measure the stated preference for the certification directly as a quantifiable amount.

To answer our valuation question, participants could choose between *"not being willing to pay more"* and one of three different price intervals, namely 0.01 Euro to 1.00 Euro, 1.01 Euro to 2.00 Euro, or 2.01 Euro to 3.00 Euro. Only participants who indicated their willingness to pay more proceeded to another round. They were asked to choose among ten more refined intervals with a width of 10 Euro-cents, that lied within the range of their first chosen interval. The selected price range stems from findings of existing studies on the WTP for fairly traded chocolate bars (Didier & Lucie, 2008; Poelmans & Rousseau, 2016; Rousseau, 2015; Teyssier, Etilé, & Combris, 2015). This iterative multiple price list method for contingent valuation allows us to elicit WTP intervals with a single switching point (Anderson, Harrison, Lau, & Rutström, 2007; Anderson, Harrison, Lau, & Rutström, 2006).

5.2.3.2 PURCHASING INTENTION

Our second outcome provides additional evidence for changes in consumers' valuation by our treatments: the purchasing intention. We measure the self-reported likelihood of purchasing Fairtrade certified products in the future with adapted items (Hansen et al., 2018; Michaelidou & Hassan, 2008). A seven-point Likert-Scale provides the answer options for participants. Subsequently, we perform a principal component analysis to derive one continuous variable capturing the core concept.[22]

5.2.4 COVARIATE MEASURES

To isolate the effects of the information treatments from response heterogeneity to information sources, we include a set of control variables. We select the controls based on determinants identified in previous consumer studies such as personal values (Grebitus et al., 2015), social norms (Johe & Bhullar, 2016), perceived effectiveness (Vermeir & Verbeke,

[21] We also included a cheap talk script to point to the possible bias in answering behavior due to the hypothetical setting. Please refer to the full questionnaire in the supplementary appendix for all the introductions.
[22] For all variables we create using principal component analysis we provide more detailed information in the supplementary material.

2008), attitudes (Panzone et al., 2016), perceived self-identity (Sparks & Shepherd, 1992) amongst others (White et al., 2019).[23]

Further, we control for the initial knowledge of the participants because it might affect the perception and so the effect of the information treatment on product valuation as research on knowledge in pro-environmental behaviour demonstrates (Onel & Mukherjee, 2016). We follow the approach in Onel and Mukherjee (2016) and divide knowledge into objective (knowing facts) and subjective (self-rated) knowledge. The objective knowledge score is derived from participants' answers to eight true or false questions about Fairtrade certification. To measure subjective knowledge, we use one continuous factor derived from a principal component analysis of participants' answers regarding their knowledge about Fairtrade certification and food production conditions compared to the average consumer in Germany following Aertsens et al. (2011).

Moreover, we include covariates capturing participants' shopping behaviours such as the frequency of buying chocolate, the average monthly chocolate expenditure, the initial frequency of buying fairly traded products, and their current awareness of such products.

5.2.5 ESTIMATION STRATEGY

To measure the average treatment effect (ATE) of the information leaflets on the valuation of fairly traded foods, we use two main models to account for the different data types. For the WTP models, we employ interval regression, a double-sided censored Tobit model, because we elicit not a point but an interval estimate. Censored interval regressions are well-suited for WTP measured as a range and are more efficient than discrete choice models (Xu, Yu, & Holst; Yang, Qing, Hu, & Liu, 2014). For the continuous aggregated measure of purchasing intention, we use OLS regressions. All models account for heteroscedasticity. We tested the model assumptions for interval regression (see the supplementary material).

First, to analyse the importance of the information source, we use a restricted sample that includes the control group and those treatment groups who received supportive information:

$$Y_i = \beta_0 + \beta_1 Fairtrade_i + \beta_2 Ministry_i + \beta_3 Retailer_i + \beta_4 supUniversity_i + \gamma X_i + \epsilon_i$$

(Estimation Equation 1)

Y_i is the outcome variable, either the WTP premium or the purchasing intention factor. $Fairtrade_i$ stands for the information treatment using the certification agency Fairtrade as a source. $Ministry_i$, $Retailer_i$, and $supUniversity_i$ represent the German Ministry for

[23] In the supplementary material we list the included covariate measures together with the question and sources they were based on, including the adjustments made for this study.

Development and International Cooperation, Germany's biggest food retailer EDEKA, and the University of Göttingen, respectively. X_i is a vector of covariates on the individual level that captures prior objective and subjective knowledge, demographic characteristics (gender, age, education, and income), values or other personal characteristics (consumer identity, perceived social norms, perceived self-efficacy, social value orientation, and trust), shopping behaviour (frequency of purchasing Fairtrade labelled products/chocolate, Fairtrade awareness, amount of chocolate purchased in the last week), and trust in Fairtrade certification.[24] ϵ_i is the error term.

Second, to analyse differences in the effects between the supportive and unsupportive statements, we use the following estimation equation:

$$Y_i = \beta_0 + \beta_4 supUniversity_i + \beta_5 unUniversity_i + \gamma X_i + \epsilon_i$$

(Estimation Equation 2.1)

The difference to the first estimation equation is the restriction of the sample. Here, we include the control group and those treatment groups that receive information from the university. Thus, only two treatment dummies are present: $supUniversity_i$, as before, and $unUniversity_i$ that stands for the unsupportive information treatment about the intended welfare effect of the Fairtrade certification using the University of Göttingen as a source.

5.3 RESULTS

5.3.1 SAMPLE CHARACTERISTICS

Table 5-2 presents descriptive statistics for our sample of 2,239 consumers that passed our checks for inattentive answering behaviour.[25] In Panel A on consumer knowledge and consumption characteristics, we differentiate subjective and objective knowledge. The two-building items of the subject knowledge factor show that our participants report having similar knowledge to the average German consumer. For objective knowledge, we asked survey participants eight questions about Fairtrade certification. The mean number of correct answers is around 3 out of 8, and the mean number of incorrect answers is around 2 out of 8. The participants answered mostly with *"don't know"*. This shows an overall lack of knowledge about the features of the certification. The low values indicate that more information is

[24] We use Pearson's correlation coefficients to detect correlated covariates. None of the covariates are statistically significantly correlated at the 5%-significance level. However, we do find correlations at the 10%-significance level with magnitudes greater than 0.6 indicating a strong relationship for fair trade awareness factor with consumer identity factor or social norms factor, and consumer identity factor with social norms factor. We keep the correlated coefficients in the regression because of the low significance level of the correlations and the different types of concepts each variable tries to capture. Moreover, we are not interested in the coefficient magnitude of said variables.

[25] We include participants in the analytical sample under two conditions: They answered three or less of six statement batteries with the same answer option in each module and need more time to complete the survey than half of the median duration of all participants.

required to potentially increase the valuation of fairly traded foods. Further, around 34% of households in the sample purchase chocolate once to multiple times a week; participants spend on average approximately 16 Euros per month on chocolate. The frequency of purchasing fairly traded products is substantially lower: only around 17% of the participants purchase once to multiple times a week, and 15% state never to do so. Yet, 40% of the participants indicate purchasing fairly traded products multiple times a month. 86% of the participants have observed the Fairtrade label in the supermarket while shopping.

Panel B presents the descriptive statistics of the outcome variables. Consumers across all sample groups are willing to pay a mean price premium between approximately 49 and 56 Euro-cents for a 100 g bar of Fairtrade certified chocolate compared to non-certified chocolate. These values are high yet also have a high standard deviation indicating substantial variation in the respondents' individual WTP. For our second outcome variable, purchasing intention, we show the two factor building items. They show that on average our participants are rather likely to purchase Fairtrade labelled foods in the future. We are confident that the treatment leaflets affected the participants' outcomes because indicators of perception of source and effect statement asked in the survey show high levels of agreement to the credibility of sender and content (see supplementary materials).

Table 5-2. Descriptive statistics

		Mean	Standard Deviation
Panel A: Selected Consumer Characteristics			
Subjective knowledge (1 to 7)	Agreement to being well informed about the Fairtrade label compared to average German consumers.	3.688	1.600
	Agreement to being a good judge regarding food production conditions compared to average German consumers.	3.666	1.539
Objective knowledge answers	Correct	3.075	1.467
(0 to 8)	Incorrect	1.897	1.396
	Don't know	3.241	2.263
Frequency buying chocolate	Never	0.027	
	Once a month	0.276	
	Multiple times a month	0.354	
	Once a week	0.243	
	Multiple times a week	0.100	
Amount spent on chocolate in the past month in Euro		16.077	15.982
Frequency buying fairly traded products	Never	0.150	
	Once a month	0.282	
	Multiple times a month	0.395	
	Once a week	0.109	
	Multiple times a week	0.065	
Observed Fairtrade label while shopping		0.860	
Panel B: Outcomes			
Bound WTP in Euro-cents	Lower (0 to 291)	48.910	54.137
	Upper (0 to 300)	55.985	56.008
Purchasing intention (1 to 7)	Agreement to buying more Fairtrade labelled food in the near future	4.485	1.599
	Likelihood of buying Fairtrade labelled food in the next 14 days	4.467	1.768

Note: This is the analytical sample consisting of 2,239 observations with complete information for all main outcomes and covariates used in the regression analysis.

5.3.2 ATE OF INFORMATION SOURCES

As the randomised allocation of participants to the treatment arms and control group is mainly successful, we conclude that the groups are overwhelmingly homogenous regarding the captured characteristics.[26] Thus, we identify the ATE of information treatments on the valuation of fairly traded foods. We assess the ATE of different information sources in Table 5-3 that presents the regression results of the supportive information treatments on the consumers' WTP (columns 1-2) and purchasing intentions (columns 3-4). We only report covariate effects that are significant at least at the 5%-significance level.

For the WTP, we observe that coefficients are very small in magnitude and go up to 4 Euro-cents of predicted price premium per 100 g of Fairtrade certified chocolate. None of the effects are statistically significant even after controlling for confounding factors. One possible explanation offers the already high overall price premium participants are willing to pay for the certification, as indicated by the constant coefficient. When we consider the estimated expected WTP premium means by treatment (Figure 5-1, left graph), we see that the expected means are relatively high for all considered treated and control groups. Participants are willing to pay between 50 and 53 Euro-cents more for chocolate across all groups if it is Fairtrade certified. Therefore, the initial WTP is high and robust to the additionally provided supportive information.

Concerning the effects of the covariates, we find that female, young, and trusting consumers who buy Fairtrade products multiple times a week, have higher household incomes, and consider themselves as an ethical consumer are willing to pay higher predicted price premiums. Trust in and awareness of Fairtrade further increase the predicted premium while the frequency of buying chocolate reduces it.

Columns 3 and 4 in Table 5-3 present the results of the purchasing intention that captures the intent to choose Fairtrade certified alternatives irrespective of the price (difference). While all treatment coefficients are positive, the effect is only statistically significant if the retailer or the government provides the information. The significant effects differ in magnitudes.

Further, we find that respondents' heterogeneity to information sources for the outcome purchasing intention differs from the one for WTP. Most pronounced socioeconomic characteristics are less important. However, consumer identity, social norms, self-efficacy, trust, and the amount spent on chocolate in the past month drive higher purchasing intention. Again, trust in and awareness of Fairtrade, as well as the high buying frequency of Fairtrade products have positive effects. Overall, the source of the information treatment matters for the magnitude of the purchasing intention but not for the WTP premium.

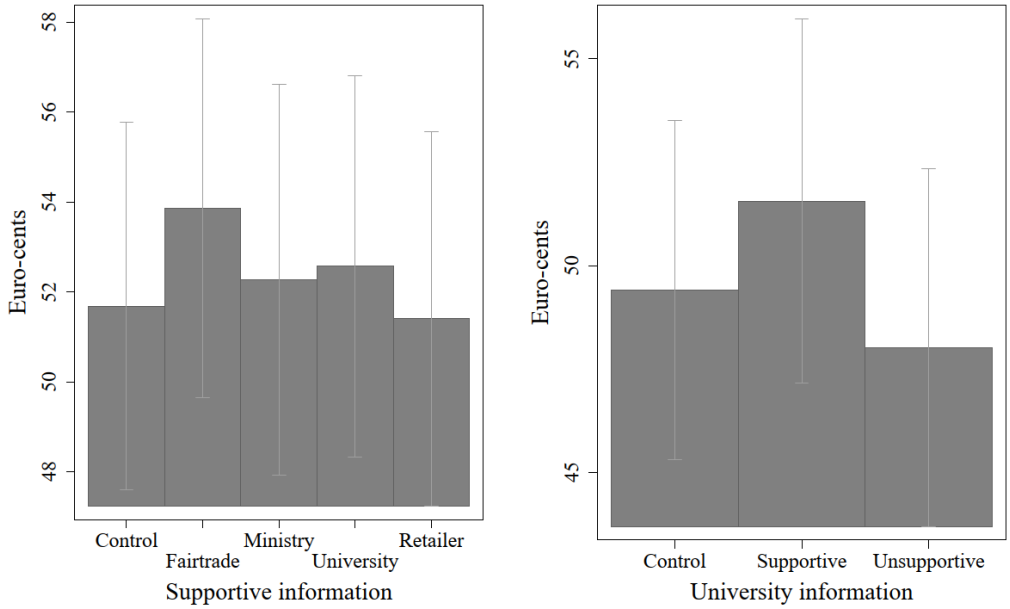
[26] In the balance table (Table A1), we barely find statistically significant differences at the 5%-significance level in respect to socio-demographics and measured concepts. We contribute these findings to chance because randomization has been conducted carefully and correctly.

Table 5-3. Treatment effects for supportive statements

	(1) Willingness-to-pay	(2) Willingness-to-pay	(3) Purchasing intention	(4) Purchasing intention
Treatment 1: Fairtrade supportive	3.758	1.720	0.105	0.069
	(4.032)	(2.717)	(0.072)	(0.043)
Treatment 2: Ministry supportive	0.881	0.318	0.107	0.095**
	(4.016)	(2.833)	(0.073)	(0.044)
Treatment 3: University supportive	-1.254	0.665	0.075	0.053
	(3.915)	(2.781)	(0.073)	(0.042)
Treatment 4: Retailer supportive	1.748	-1.575	0.168**	0.087*
	(4.050)	(2.722)	(0.073)	(0.045)
Additive overall knowledge score (0 to 16)		-0.583		-0.006
		(0.513)		(0.008)
Subjective knowledge factor (pcf)		1.095		0.028
		(1.030)		(0.020)
Female		10.563***		0.034
		(1.899)		(0.028)
Other/diverse		-8.959		-0.213***
		(24.040)		(0.067)
Age in years		-0.416***		0.000
		(0.073)		(0.001)
Highest educational level		-0.162		-0.011
		(0.891)		(0.013)
Household income		2.822***		0.030*
		(1.086)		(0.016)
Consumer identity factor (pcf)		3.401**		0.210***
		(1.725)		(0.033)
Social norms factor (pcf)		1.018		0.059**
		(1.276)		(0.026)
Self-efficacy factor (pcf)		1.819*		0.055***
		(0.984)		(0.018)
Primary SVO angle in degrees		0.073		0.001
		(0.068)		(0.001)
General trust		1.432**		0.021**
		(0.582)		(0.010)
Frequency of buying Fairtrade products:				
Once a month		1.662		0.460***
		(2.613)		(0.059)
Multiple times a month		1.641		0.613***
		(3.115)		(0.066)
Once a week		0.277		0.708***
		(4.731)		(0.080)
Multiple times a week		14.882**		0.797***
		(6.462)		(0.087)
Frequency of buying chocolate		-2.248**		0.001
		(1.067)		(0.017)
Fairtrade awareness factor (pcf)		10.211***		0.171***
		(1.507)		(0.029)
Amount spent on chocolate in the past month in Euro		0.095		0.002**
		(0.082)		(0.001)
Trust in Fairtrade factor (pcf)		4.693***		0.231***
		(1.043)		(0.023)
Constant	52.319***	60.719***	-0.033	-0.659***
	(2.787)	(8.385)	(0.050)	(0.135)
AIC	13,703.220	12,857.269	5,287.603	3,331.787
Observations	1,858	1,858	1,858	1,858

Note: Predicted willingness-to-pay is measured in Euro-cents. Purchasing intention is a factor derived through principal component analysis. Standard errors in parentheses. *, **, and *** represent statistically significance at the 10%-, 5%-, or 1%-significance level, respectively. The abbreviation pcf indicates that this variable is the factor score generated by a principal component analysis. AIC stands for the Akaike Information Criterion to compare model-fit.

Figure 5-1. Expected means of WTP and 95% confidence interval



Note: The expected means represent the expected cell means for each treatment using predictive margins based on the interval regression corrected for heterogeneity. The two figures stem from different regressions, thus, the mean of the control group differs.

5.3.3 ATE OF SUPPORTIVE & UNSUPPORTIVE STATEMENTS BY UNIVERSITY

We now turn to the ATE for supportive and unsupportive statements from one source. Columns 1 and 2 in Table 5-4 show the coefficients for the predicted WTP premium. While the unsupportive effect statement has the expected sign in both columns, the coefficient of the supportive effect statement only turns positive when controlling for confounding factors. This positive coefficient in the main specification indicates a higher predicted WTP premium. The unsupportive statement has a negative coefficient that indicates a reducing effect. However, the coefficients are statistically insignificant. Compared to the expected mean of the WTP premium of the control group shown on the right side of Figure 5-1, the effect sizes are again small in magnitude. Similar to the results in Table 5-3, information treatments delivered by a university have no statistically significant effect.

The results for the purchasing intention regressions in columns 3 and 4 show that the unsupportive statement by the university has a negative and statistically significant effect on the purchasing intention. The coefficient is large in magnitude, particularly compared to the positive results in Table 5-3. Thus, consumers that receive the information that *"Fairtrade was not found to improve incomes and working conditions"* have a significantly lower purchasing intention. In contrast, the supportive statement does not have a statistically significant effect.

Table 5-4. Treatment effects for university statements

	(1) Willingness-to-pay	(2) Willingness-to-pay	(3) Purchasing intention	(4) Purchasing intention
Treatment 3: University supportive	-1.254	2.386	0.075	0.054
	(3.915)	(2.726)	(0.073)	(0.043)
Treatment5: University unsupportive	-4.191	-1.914	-0.208***	-0.121***
	(3.950)	(2.719)	(0.071)	(0.046)
Additive overall knowledge score (0 to 16)		-0.197		-0.001
		(0.638)		(0.011)
Subjective knowledge factor (pcf)		0.235		0.042
		(1.319)		(0.026)
Female		8.595***		0.007
		(2.353)		(0.036)
Other/diverse		14.799***		0.932***
		(5.193)		(0.091)
Age in years		-0.374***		0.001
		(0.089)		(0.001)
Highest educational level		-0.727		-0.030*
		(1.131)		(0.017)
Household income		0.725		0.026
		(1.350)		(0.020)
Consumer identity factor (pcf)		5.916***		0.232***
		(2.132)		(0.041)
Social norms factor (pcf)		1.057		0.036
		(1.532)		(0.029)
Self-efficacy factor (pcf)		1.933		0.032
		(1.239)		(0.024)
Primary SVO angle in degrees		-0.019		-0.001
		(0.086)		(0.001)
General trust		1.458**		0.027**
		(0.738)		(0.013)
Frequency of buying Fairtrade products:				
Once a month		4.459		0.446***
		(3.213)		(0.073)
Multiple times a month		4.220		0.578***
		(4.110)		(0.083)
Once a week		8.833		0.642***
		(6.120)		(0.101)
Multiple times a week		24.146***		0.698***
		(8.121)		(0.119)
Frequency of buying chocolate		-5.558***		0.017
		(1.348)		(0.023)
Fairtrade awareness factor (pcf)		4.085**		0.170***
		(1.828)		(0.037)
Amount spent on chocolate in the past month in Euro		0.193*		0.001
		(0.104)		(0.002)
Trust in Fairtrade factor (pcf)		7.837***		0.257***
		(1.344)		(0.029)
Constant	52.319***	64.842***	-0.033	-0.610***
	(2.787)	(10.435)	(0.050)	(0.170)
AIC	8,659.950	8,188.561	3,298.622	2,155.087
Observations	1,158	1,158	1,158	1,158

Note: Predicted willingness-to-pay is measured in Euro-cents. Purchasing intention is a factor derived through principal component analysis. Standard errors in parentheses. *, **, and *** represent statistically significance at the 10%-, 5%-, or 1%-significance level, respectively. The abbreviation pcf indicates that this variable is the factor score generated by a principal component analysis. AIC stands for the Akaike Information Criterion to compare model-fit.

5.3.4 LIMITATIONS AND ROBUSTNESS

Our results have to be interpreted given the potential biases due to framing and social desirability. When we use multiple price lists for the contingent valuation approach, we face a framing effect that makes participants choose the answers in the middle more often (Anderson et al., 2006; Anderson et al., 2007). Though there is a certain crowding for choosing an answer option in the middle, the distribution of answer options is overall spreading across the whole range of possible options (Table A2). The framing effect, if present at all, is not very strong at play in our data.

Another potential source of bias in our analysis is social desirability. As the participants are prompted to express their willingness to purchase or to pay for ethically produced chocolate in comparison to conventional chocolate, participants might want to appear in a positive light by exaggerating their valuation of Fairtrade certified products. In the real world, social desirability partly drives the discrepancy between the public opinion favouring socially acceptable fairly traded products and the small market share of these (Lusk, 2018). As the randomization is successful considering the observable characteristics in the balance tables (Table A1), people in the different treatment and control arms should have on average the same levels of social desirability, an unobservable characteristic. Thus, social desirability should not bias the treatment effect. Additionally, the anonymous online setting of our survey should minimize this upward bias. Thus, bias caused by social desirability, or framing should hardly affect our estimates.

5.4 DISCUSSION

Since our descriptive results are comparable to market data and findings of previous research, our study seems to be at least externally valid for the German market (Iweala et al., 2019; TransFair, 2021). Though it is difficult to compare our measure of knowledge about Fairtrade to existing data, our descriptive results support that German consumers understand the gist of Fairtrade without knowing details (Grunert et al., 2014; Langen & Adenaeuer, 2013).

The expected means of WTP premium for a 100 g bar of chocolate with a Fairtrade label range between 49 Euro-cents and 56 Euro-cents. These values are at the lower end of WTP estimates of other studies (Didier & Lucie, 2008; Poelmans & Rousseau, 2016; Rousseau, 2015) and compare best with findings by Teyssier et al. (2015) who find a WTP premium of 46 Euro-cents per 100 g of chocolate in a private setting.

In contrast with the consensus in the existing literature, we find that information treatments do not necessarily increase the WTP for sustainable foods (Cecchini et al., 2018). Since the initial WTP for fairly traded products is high in our study, additional information does not lead to a further increase. Therefore, the source of the information makes no difference. Nevertheless, the information issued by a retailer or the government affects participants' purchasing intention. This finding highlights the special role of retailers, especially

supermarkets, as gatekeepers for producers and consumers regarding sustainability issues (Saber & Weber, 2019; Schulze, Spiller, & Risius, 2019; Wilson, 2015).

Our study further finds that a zero-effect statement reduces consumers' valuation of sustainable foods. However, we only find statistically significant effects for purchasing intention. This is unlike most of the existing literature that shows that negative statements decrease consumers' valuation of organic or fairly traded foods (Disdier & Marette, 2012; Gifford & Bernard, 2006; Müller & Gaus, 2015). The fact that our unsupportive statement is a zero-effect and not a negative effect could also explain the small magnitude and the lack of statistical significance. Moreover, the information treatments used in this study might not affect consumers' product valuation because social responsibility affects consumers' food choices less than information regarding price or nutrition (Ghvanidze et al., 2017). Nevertheless, German consumers do value the communication of prosocial aspects on foods.

5.5 CONCLUSION

Despite little knowledge about Fairtrade certification, German consumers are generally willing to pay a high price premium for a Fairtrade labelled product in our study. Additional supportive information does not increase the participants' predicted WTP premium but leads to higher purchasing intention, especially for sources like retailers or the government. Unsupportive (zero effect) statements by a university can discourage purchasing intention. Even though we have addressed potential sources of bias, our results should be interpreted with care because our findings might be product and country-specific.

Nevertheless, our results have merit and call the attention of policymakers wanting to increase sustainable consumption and stop human rights violations in supply chains. As the predicted WTP premium is robust to the provision of supportive information in our study, we think that the potential of information to increase the WTP for ethically certified products of consumers in Germany might already be exhausted for a well-known and established label like Fairtrade. Thus, alternatives are needed to increase the prevalence of ethical production and the market share of such products. These alternatives do not need to target the consumer because their WTP for sustainability certification is already high – at least in the case of chocolate. One option is to shift the focus to the producer to introduce more due diligence in their supply chains concerning social and environmental aspects. A subsequent increase in transparency and credibility could then again incentivize the consumer.

Though additional information is not increasing the Fairtrade premium significantly, it might still assist to increase another dimension of demand: the frequency of purchasing Fairtrade labelled products as our findings suggest. Thus, information – if provided by a retailer or the government – could stimulate consumers' frequency of buying Fairtrade certified products.

The last implication of our study is the caution with which scientific results should be communicated. Academic studies, on which science communication is based, generally

analyse narrow research questions in a specific setting. Context and limitations, especially of unsupportive (zero effect) findings, need to be communicated clearly to avoid negative effects on consumption behaviour.

To strengthen the understanding and evidence on the issues addressed in this paper, future research should broaden the range of investigated products and contexts. Further, future research should engage in other techniques eliciting the WTP premium of fairly traded food products and consider purchasing intention or measures of frequency as another dimension worth investigating.

5.6 APPENDIX

Figure A1. Treatment 1: Fairtrade

Last week the following communication from **Fairtrade** was in the media. **Please read this message carefully.**

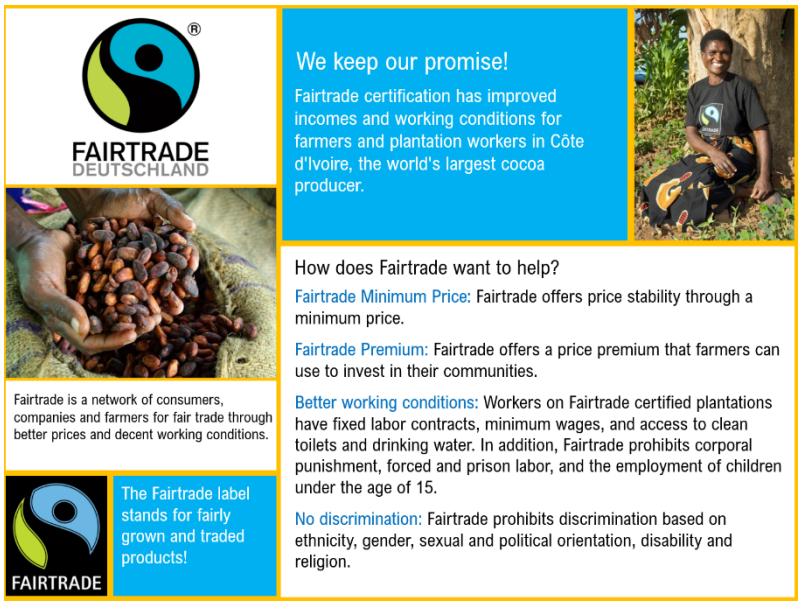


Figure A2. Treatment 2: Ministry

Last week, the following announcement from the **German Federal Ministry for Development and Cooperation** was in the media. **Please read this message carefully.**

Figure A3. Treatment 3: University supportive

Last week, the following announcement from the **University of Göttingen** was in the media. **Please read this message carefully.**

Figure A4. Treatment 4: Retailer

Last week, the following announcement from **EDEKA** was in the media. **Please read this message carefully.**

Figure A5. Treatment 5: University unsupportive

Last week, the following announcement from the **University of Göttingen** was in the media. **Please read this message carefully.**

Table A1: Balance Table

	Mean (standard deviation)						p-value of difference					
	Fairtrade	Ministry	Retailer	University +	University -	Control	Fairtrade - Control	Ministry – Control	Retailer - Control	University + - Control	University - - control	University + - University -
Panel A: Socio- economic status												
Age in years	45.580 (13.354)	44.866 (14.331)	44.347 (14.103)	45.881 (14.579)	45.068 (14.763)	46.362 (14.486)	0.439	0.148	0.055*	0.645	0.215	0.448
Gender												
Female	0.497 (0.501)	0.547 (0.498)	0.454 (0.499)	0.539 (0.499)	0.541 (0.499)	0.534 (0.499)	0.303	0.728	0.027**	0.898	0.862	0.965
Male	0.497 (0.501)	0.453 (0.498)	0.543 (0.499)	0.461 (0.499)	0.457 (0.499)	0.466 (0.499)	0.380	0.728	0.033**	0.898	0.804	0.908
Other/diverse	0.006 (0.074)	0.000 (0.000)	0.003 (0.054)	0.000 (0.000)	0.003 (0.051)	0.000 (0.000)	0.134	.	0.279	.	0.302	0.324
Highest achieved education degree												
Hauptschulabschluss	0.348 (0.477)	0.324 (0.469)	0.373 (0.484)	0.358 (0.480)	0.370 (0.483)	0.404 (0.491)	0.111	0.021**	0.384	0.193	0.330	0.742
Realschulabschluss	0.307 (0.462)	0.284 (0.452)	0.306 (0.462)	0.291 (0.455)	0.304 (0.461)	0.268 (0.444)	0.244	0.625	0.252	0.483	0.265	0.689
(Fach−)Hochschulreife	0.141 (0.348)	0.172 (0.378)	0.139 (0.346)	0.154 (0.361)	0.155 (0.362)	0.138 (0.345)	0.906	0.194	0.975	0.536	0.502	0.963
Hochschul − /Universitätsabschluss	0.193 (0.395)	0.204 (0.403)	0.162 (0.369)	0.181 (0.385)	0.171 (0.377)	0.187 (0.391)	0.828	0.561	0.363	0.813	0.545	0.719
Household income												
Below 1,300 Euro	0.265 (0.442)	0.271 (0.445)	0.251 (0.434)	0.213 (0.410)	0.273 (0.446)	0.278 (0.449)	0.684	0.814	0.406	0.035**	0.867	0.055*
1,300 to 2,599 Euro	0.390 (0.488)	0.381 (0.486)	0.402 (0.491)	0.442 (0.497)	0.394 (0.489)	0.389 (0.488)	0.992	0.809	0.726	0.135	0.896	0.179
2,600 to 4,499 Euro	0.271 (0.445)	0.271 (0.445)	0.298 (0.458)	0.278 (0.448)	0.249 (0.433)	0.249 (0.433)	0.489	0.484	0.133	0.362	0.985	0.379
4,500 Euro and above	0.075 (0.263)	0.078 (0.268)	0.049 (0.216)	0.067 (0.251)	0.084 (0.278)	0.084 (0.277)	0.640	0.759	0.060*	0.391	0.990	0.390
Panel B: Values												
Consumer identity factor (pcf)	0.019 (1.000)	-0.026 (1.006)	0.061 (0.981)	-0.014 (1.009)	-0.142 (1.010)	0.004 (1.029)	0.831	0.679	0.434	0.803	0.045**	0.083*

Social norms factor (pcf)	0.027	0.043	0.071	-0.004	-0.110	0.057	0.688	0.843	0.848	0.390	0.020**	0.152
	(1.052)	(1.014)	(0.964)	(0.999)	(1.019)	(0.986)						
Self-efficacy factor (pcf)	0.055	0.041	0.086	-0.031	-0.044	-0.016	0.344	0.443	0.184	0.833	0.694	0.866
	(0.995)	(1.010)	(1.035)	(1.066)	(0.983)	(1.047)						
Primary SVO angle in degrees	27.804	26.316	27.982	27.145	26.959	26.935	0.345	0.4991	0.256	0.822	0.979	0.835
	(12.044)	(12.193)	(11.702)	(12.727)	(11.791)	(13.285)						
General trust	3.552	3.528	3.613	3.636	3.556	3.392	0.169	0.249	0.074*	0.047**	0.166	0.521
	(1.553)	(1.616)	(1.709)	(1.761)	(1.647)	(1.667)						
Panel C: Shopping Behavior												
Frequency of buying chocolate												
…..Never	0.033	0.027	0.020	0.027	0.031	0.025	0.481	0.848	0.686	0.838	0.560	0.712
	(0.179)	(0.162)	(0.141)	(0.162)	(0.175)	(0.155)						
…..Once a month	0.282	0.306	0.249	0.267	0.270	0.281	0.976	0.447	0.319	0.664	0.743	0.914
	(0.450)	(0.461)	(0.433)	(0.443)	(0.445)	(0.450)						
…..Multiple times a month	0.334	0.346	0.355	0.372	0.360	0.355	0.553	0.797	0.982	0.617	0.886	0.725
	(0.472)	(0.476)	(0.479)	(0.484)	(0.481)	(0.479)						
…..Once a week	0.262	0.223	0.266	0.243	0.231	0.239	0.453	0.588	0.396	0.905	0.793	0.708
	(0.441)	(0.416)	(0.442)	(0.429)	(0.422)	(0.427)						
…..Multiple times a week	0.088	0.099	0.110	0.092	0.108	0.101	0.553	0.934	0.694	0.660	0.761	0.466
	(0.284)	(0.299)	(0.313)	(0.289)	(0.310)	(0.302)						
Amount spent on chocolate in the past month in Euro	14.912	17.432	15.789	16.105	15.659	16.485	0.132	0.481	0.523	0.732	0.455	0.687
	(12.803)	(21.504)	(13.818)	(15.105)	(15.238)	(15.759)						
	(0.339)	(0.329)	(0.355)	(0.343)	(0.348)	(0.351)						
Fairtrade awareness factor (pcf)	0.052	-0.019	0.097	-0.001	-0.115	-0.002	0.474	0.819	0.190	0.985	0.127	0.122
	(1.043)	(1.010)	(1.015)	(1.012)	(1.015)	(1.056)						
Frequency of buying fairly traded products												
…..Never	0.152	0.137	0.136	0.140	0.176	0.155	0.901	0.468	0.455	0.557	0.436	0.180
	(0.359)	(0.344)	(0.343)	(0.348)	(0.381)	(0.363)						
…..Once a month	0.286	0.295	0.246	0.245	0.307	0.296	0.933	0.984	0.126	0.1168	0.725	0.058*
	(0.458)	(0.457)	(0.431)	(0.431)	(0.462)	(0.457)						
…..Multiple times a month	0.398	0.416	0.399	0.426	0.341	0.392	0.862	0.497	0.840	0.333	0.143	0.017**
	(0.490)	(0.493)	(0.490)	(0.495)	(0.475)	(0.489)						
…..Once a week	0.102	0.088	0.142	0.121	0.105	0.096	0.776	0.715	0.053*	0.258	0.678	0.481
	(0.303)	(0.284)	(0.349)	(0.327)	(0.307)	(0.295)						
…..Multiple times a week	0.050	0.064	0.078	0.067	0.071	0.062	0.476	0.874	0.376	0.742	0.601	0.851
	(0.218)	(0.246)	(0.269)	(0.251)	(0.257)	(0.241)						
Trust in Fairtrade factor (pcf)	0.104	0.022	0.068	0.013	-0.074	0.014	0.214	0.914	0.455	0.995	0.214	0.239
	(1.003)	(1.008)	(0.973)	(1.041)	(1.000)	(0.990)						

Panel D: Knowledge												
Subjective knowledge factor (pcf)	-0.014 (0.979)	-0.014 (1.030)	0.028 (1.022)	-0.003 (0.974)	-0.029 (0.965)	-0.099 (1.042)	0.248	0.254	0.093*	0.187	0.331	0.713
Additive overall knowledge score (0 to 16)	9.298 (1.636)	9.263 (1.695)	9.078 (1.710)	9.129 (1.792)	9.092 (1.876)	9.202 (1.790)	0.438	0.627	0.334	0.573	0.400	0.779

Note: This is the analytical sample consisting of 2,239 observations with complete information for all main outcomes and covariates used in the regression analysis. The abbreviation pcf indicates that this variable is the factor score generated by a principal component analysis. *, **, and *** represent statistically significance at the 10%-, 5%-, or 1%-significance level, respectively.

Table A2. Frequency of answer options for WTP options

	Absolute frequency	Relative frequency in percent
Panel A: WTP: First Level		
I am not willing to pay more.	489	21.84
I am willing to pay between … Euro more.		
… 0.01 to 1 …	1434	64.05
… 1.01 to 2...	283	12.64
… 2.01 to 3...	33	1.47
Total	2,239	100.00
Panel B: WTP: Second Level 1		
I am willing to pay between … Euro more.		
…0.01 to 0.10 …	112	7.82
…0.11 to 0.20...	213	14.86
…0.21 to 0.30...	182	12.70
…0.31 to 0.40...	108	7.54
…0.41 to 0.50...	285	19.89
…0.51 to 0.60...	140	9.77
…0.61 to 0.70...	44	3.07
…0.71 to 0.80...	66	4.61
…0.81 to 0.90...	38	2.65
…0.91 to 1.00…	245	17.10
Total	1,433	100.00
Panel C: WTP: Second Level 2		
I am willing to pay between …Euro more.		
…1.01 to 1.10...	30	10.60
...1.11 to 1.20...	47	16.61
...1.21 to 1.30...	32	11.31
...1.31 to 1.40...	15	5.30
...1.41 to 1.50...	53	18.73
...1.51 to 1.60...	36	12.71
...1.61 to 1.70...	14	4.95
...1.71 to 1.80...	7	2.47
...1.81 to 1.90...	11	3.89
...1.91 to 2.00...	38	13.43
Total	272	100.00
Panel D: WTP: Second Level 3		
I am willing to pay between … Euro more.		
...2.01 to 2.10...	3	9.09
...2.11 to 2.20...	2	6.06
...2.21 to 2.30...	1	3.03
...2.31 to 2.40...	2	6.06
...2.41 to 2.50...	2	6.06
...2.51 to 2.60...	5	15.15
...2.61 to 2.70...	1	3.03
...2.71 to 2.80...	1	3.03
...2.81 to 2.90...	1	3.03
...2.91 to 3.00...	15	45.45
Total	33	100.00

Table A3: ATE including inattentive participants

	Supportive Statements		Unsupportive Statements	
	(1) Willingness-to-pay	(2) Purchasing intention	(3) Willingness-to-pay	(4) Purchasing intention
Treatment 1: Fairtrade supportive	2.582	0.080**		
	(2.637)	(0.040)		
Treatment 2: Ministry supportive	1.094	0.094**		
	(2.719)	(0.040)		
Treatment 3: University supportive	0.857	0.058	2.554	0.057
	(2.691)	(0.040)	(2.609)	(0.040)
Treatment 4: Retailer supportive	0.284	0.088**		
	(2.753)	(0.042)		
Treatment 5: University unsupportive			-0.072	-0.125***
			(2.639)	(0.043)
Observations	2,037	2,037	1,277	1,277

Note: Predicted willingness-to-pay is measured in Euro-cents. Purchasing intention is a factor derived through principal component analysis. Standard errors in parentheses. *, **, and *** represent statistically significance at the 10%-, 5%-, or 1%-significance level, respectively. All regressions include the selected covariates as in Table 3 and 4 column (2) and (4).

CHAPTER 6

6 GENERAL CONCLUSION

VSS represent one pathway towards more sustainable global food systems. They set standards considering environmentally or socially responsible production practices and allow to recognize, track and label the resulting produce in supply chains. The growth of VSS and the differentiations of their features is influenced by many actors along supply chains (Auld, 2014; Fulponi, 2006). Demand depends on retailers listing them in their supermarkets (Fulponi, 2006; Schulze et al., 2019) and on consumers choosing them over their uncertified counterparts. Differences among VSS, product groups and countries persist in respect to market penetration as outlined in CHAPTER ONE. In view of overall small market shares and supply often exceeding the demand of certified products (Meier et al., 2020), the low uptake by consumers requires attention. In contrast to the growing but low uptake stands the mostly favourable disposition of individuals towards VSS when asked in opinion polls or questionnaires. This gap between attitude, intention and behaviour is widely discussed in consumer research and agriculture economics (e.g. Lusk, 2018). CHAPTER ONE summarizes some of the factors contributing to the gap and the attached limitations of ethically certified products to establish themselves in the mainstream.

Based on four empirical studies, this thesis contributes to the understanding of consumer preferences for ethically certified products in three countries, that are among others characterized by different market diffusion of VSS. The identification of coherent results among studies despite different methodological approaches increases the internal validity of our findings and are presented in the following section. Findings that appear conflicting are discussed in connection with the limitations of this thesis. The chapter concludes with recommendations for policymakers and actors along the supply chain on how to encourage sustainable consumption.

6.1 MAIN FINDINGS

An awareness and rudimentary understanding of a consumer-facing sustainability label is required in order for labels to influence the decision-making of consumers, to guide consumers to choose according to their intention and attitudes and to associate the purchase with achieving these intentions, and perhaps the feeling of the warm glow. Three of the presented studies underline the importance of label awareness in the uptake of products with ethical certification despite several differences among markets and sustainability standards. CHAPTER TWO establishes this link most clearly: Even though participants state their feeling of the warm glow when doing something about climate change and their intention to purchase products with a low carbon-footprint, both factors are negatively associated with the participants' valuation of products with the corresponding label in the choice experiment. Less than 20% of participants in Germany and the UK report to have seen the label before when shopping. At the same time, awareness of the label is positively associated with a higher valuation in both samples. We conclude, therefore, that most participants did not recognize

the label as an indication of a lower carbon-footprint. As a result, it could not serve as a guidance for consumers to choose according to their intention.

Looking at a well-established sustainability standard, such as Fairtrade, awareness is associated with a higher valuation of certified products (CHAPTER TWO) and with higher WTP and higher purchase intention (CHAPTER FIVE).

CHAPTER FOUR reveals that the lesser known sustainability standard (here, Rainforest Alliance) profits the most from additional information, which has the potential to raise its profile among consumers. Irrespective of the differently framed messages in this study, both have at their core a simple information disclosure that notifies participants about the cause of the respective sustainability label. In the absence of this additional information, the mean-WTP for the Rainforest Alliance products is much lower than for the same products which feature the Fairtrade label. When additional information is provided, participants' WTP for the products with the Rainforest Alliance certification increases significantly. The well-known Fairtrade certification did not profit from the additional information given to participants. CHAPTER FIVE supports this observation as measured mean-WTP for the Fairtrade certification in the control group is already at a high level. The information treatment does not increase the WTP but only affects the purchase intention of participants. These different treatment effects can be explained by consumers being less aware and knowledgeable about the Rainforest Alliance label compared to the Fairtrade label (Annunziata et al., 2019; Grunert et al., 2014). Only in this case, information provision appears to matter.

Another predominant theme is the differentiation of sustainability standards according to their benefits – either public, private or mixed – as perceived by consumers. This differentiation is important on two layers. The first layer is conceptual and refers to the application of the warm glow of giving to consumer choice. CHAPTER TWO provides evidence that the warm glow is rather linked to sustainability standards that offer distinctively public benefits compared to sustainability standards that despite offering public benefits are also perceived by consumers as offering private benefits. One example of such is the organic label which offers environmental benefits due to its production methods, but is also associated by consumers with private benefits, such as health. In that case, the public characteristic of the sustainability standard is diluted and does not elicit the feeling of the warm glow.

CHAPTER THREE further supports this differentiation as the warm glow in the UK is only associated with the environmental standard and in China only with the social standard (both with distinctively public benefits), but in neither case with the food safety standard (with mixed benefits). Returning to the definition of the warm glow, as a positive feeling of individuals when doing good, puts this observed differentiation on theoretical footing, as doing good refers to other-benefiting behaviour. Interestingly, the warm glow itself is defined as a derived personal utility, and therefore a private benefit. Even though we find that the sustainability standard should ideally be perceived as creating a public benefit, so that the warm glow can play a role in the decision-making process, the warm glow itself constitutes a

private benefit. Following this line of thought, this thesis provides evidence that private benefits matter when purchases appear to be altruistic. It adds a different aspect to the research on self-interest subsumed under 'the (individual) self' and under 'feelings and cognition' in CHAPTER ONE. In contrast to other self-beneficial factors, such as status (Griskevicius et al., 2010), the warm glow is less context-dependent as it serves as a self-signal instead of a signal to others.

The second layer of this differentiation between public and private benefits is related to the design of VSS. CHAPTER THREE finds that participants are not willing to accept different tiers of stringency when the sustainability standard is associated with private benefits, like food safety. When standards are associated with public benefits only, different tiers of stringency are, at least in the UK sample, accepted. The established acceptance of multi-tier standards in respect to animal welfare (Weinrich & Spiller, 2016) is indicative of this as well. Nevertheless, participants in China do not seem to value different stringency levels irrespective of the generated private or public benefits of the VSS. We discuss reasons for this finding in CHAPTER THREE, such as conspicuous consumption or unfamiliarity with multi-tier VSS.

On a more general level, the thesis underscores the existence of differences among countries as well as their market segments. In CHAPTER THREE this difference is also visible in the underlying motivation to choose more sustainably sourced products and in the valuation of various VSS design features. In CHAPTER TWO the varying degree of VSS diffusion in Germany (organic playing the biggest role) and the UK (Fairtrade playing the biggest role) is confirmed. Apart from highlighting the importance of market differences when designing and marketing VSS, it also adds external validity to our findings.

The price of certified products plays a similar role in all of our country samples. When a trade-off between price and other product attributes is stimulated, such as in CHAPTER TWO and CHAPTER THREE, price is crucial. Among all included attributes, price is the biggest influencing factor when the average consumer in Germany, the UK and China chooses their tea or chocolate. In China, findings regarding price levels are more nuanced. Possible reasons are discussed in CHAPTER THREE. The importance of price is expressed further in the role of income in CHAPTER FOUR and CHAPTER FIVE. In both analyses, income of participants is positively correlated with their WTP for the certified products. Circling back to the support of multi-tier standards in the UK, which is linked to sustainability concerns of participants, this offers possibilities of VSS developments with different levels of stringency offered at matching prices.

Insights about the role of the warm glow in the decision-making process of consumers are touched upon conceptually above, with respect to the differentiation between public and private benefits. Empirically, a nuanced picture emerges from the findings in CHAPTER TWO and CHAPTER FOUR. On a positive note, the operationalization of the warm glow based on existing but slightly adapted items (Hartmann et al., 2017; van der Linden, 2018) succeeded in all country settings. The principal component analysis resulted in comparable findings in the UK,

Germany and China. A single warm glow factor, combining social and environmental aspects, emerged in each sample. The combination of social and environmental aspects is in line with the conceptual underpinning of the warm glow. Warm glow givers do good irrespective of the consequences, as discussed in detail in CHAPTER TWO and CHAPTER FOUR.

The initial insights regarding the connection between the warm glow and the valuation of ethically certified products of CHAPTER TWO set the stage for CHAPTER FOUR. The stronger association between the warm glow and the Fairtrade label as well as the overall larger role of the warm glow among consumers in Germany constitute the starting point for further testing in CHAPTER FOUR. A forthright link between experiencing a warm glow and an increased valuation of certified products is not reproduced. This link exists only when the warm glow interacts with increased age and increased income. The difference is assumedly a result of the experimental set-up of the respective studies. Choices by participants in CHAPTER TWO are purely hypothetical, choices by participants in CHAPTER FOUR are binding. This explanation is discussed further in the section on limitations.

6.2 LIMITATIONS AND FUTURE RESEARCH

The interpretation of results requires an accentuated discussion of the limitations of the studies comprised in this thesis. As each chapter includes a discussion of its study design specific limitations, at this point, the emphasis is on predominant issues identified in the course of realizing this thesis.

The hypothetical set-up of most studies is assumedly a key limitation, affecting especially CHAPTER TWO, CHAPTER THREE and CHAPTER FIVE. The main concern about results solely based on questionnaires is about the divergence between stated and revealed preferences. Stated preferences can be subjected to socially desirable behaviour and are, therefore, not fully reflective of actual behaviour. As pinpointed in the respective chapters, precautions were put in place to mitigate such divergence, e.g. respondents were presented with cheap talk scripts. They explain the hypothetical bias to participants and remind them to answer or choose in accordance to their budget and usual behaviour (Silva et al., 2011). Overall, socially desirable behaviour is less pronounced in an anonymous online setting without social interactions or experimenter demand effects (Grimm, 2010). Findings of the respective chapters suggest likewise as price turns out to be the most important influencing factor when respondents across countries choose hypothetically. Additionally, the studies' objective was not to establish the absolute WTP for products, but to identify links between the valuation of products and various concepts (CHAPTER TWO and CHAPTER THREE) or to identify treatment effects (CHAPTER FOUR and CHAPTER FIVE). Balancing tables show that treatment arms do not differ between observable characteristics. Hence, any bias would uniformly exist across all treatment groups. Identified links are, therefore, believed to be valid, despite the possibility of the valuation of certified products to be inflated due to social desirability bias.

CHAPTER FOUR lends support to the possibility of more biased findings in the hypothetical setting. The warm glow itself is not associated with a higher WTP in the binding setting of CHAPTER FOUR, but requires to be accompanied by higher income and age. Hence, when the experimental study design is hypothetical, the interpretation of the warm glow needs to be done cautiously. This aligns with findings in early studies on the role of the warm glow in contingent valuation techniques (Bennett & Blaney, 2003; Kahneman & Knetsch, 1992; Nunes & Schokkaert, 2003). Yet, even there it is argued that the warm glow is a legitimate part of WTP since it is a stable and measurable part of participants' preferences (Nunes & Schokkaert, 2003, p. 243). Based on our findings, it may be added that the warm glow is a stable and measurable part of individual preferences that requires to be backed up by financial means in order to be acted upon. Further incentive-aligned experiments would help to detangle the effect of the warm glow on stated and revealed preferences.

Moreover, and as deliberated on in CHAPTER ONE, results need to be understood within the scope of this thesis. The focus on cocoa (chocolate) and tea is important because of the outlined environmental and social problems during cultivation and the mismatch between increasing certified supply and demand. From a consumer perspective, chocolate and tea are hedonic products and it is argued that affective marketing is more suitable for those as opposed to utilitarian products (Guerreiro et al., 2015; Peloza et al., 2013). Hence, their suitability for testing the concept of the warm glow. Moreover, Fairtrade and Rainforest Alliance certification schemes cover especially such products, creating a fitting combination. Therefore, our findings only have limited power to add to the understanding of consumer preferences for ethically certified products that are less hedonic in nature, such as rice or palm oil. For example, the role of affect vis-à-vis information in the valuation of such products would be of interest, especially when considering their wide use and global demand.

Lastly, this thesis focuses on the average consumer in three distinct markets with the aim of extending the understanding of the mass market of ethically certified products and identifying options to increase the uptake of such products by the average consumer. A more detailed analysis of consumer clusters and resulting niche markets of the collected data is likely to produce additional insights.

6.3 POLICY RECOMMENDATIONS

Presented findings can underpin the use of various tools, that policymakers and actors along the supply chain can use in order to support sustainable consumption – in a narrow sense via boosting the uptake of ethically certified products, in a broader sense via creating more options for individuals to act in line with their preference.

The findings of this thesis consistently highlight that label awareness is crucial for consumers to recognize a sustainability cause that is in line with their preference. At this, policymakers and other actors need to differentiate between well-established and lesser-known VSS.

Whereas established VSS do not appear to profit from information provision, it makes a big difference for lesser-known ones. Certifiers, like Rainforest Alliance, can boost their profile via information campaigns. CHAPTER FIVE highlights that consumers are most inclined to respond to information issued by a retailer or a government agency. Respectively, the role of retailers as gatekeepers to sustainable consumption needs to be paid attention to. But most certainly, collaborations, such as between WWF and EDEKA in Germany, appear suitable to raise awareness among customers. Social marketing campaigns by government agencies can also raise the profile of lesser-known sustainability certifications. Even if VSS are private and not public, they can be embedded in larger social marketing campaigns targeting sustainable consumption. The importance of label awareness is especially relevant when new VSS are to be introduced to the market, such as potential climate or environmental VSS in the EU, or when long-standing VSS have a low profile, such as the organic label in the UK. Here, comparison can be drawn to the large and successful campaign of the German organic label twenty years ago. Considering that information provision is a policy tool of comparatively low intensity and, therefore, high societal acceptance, opposition and reactance are unlikely (Fesenfeld et al., 2020; WBAE, 2020).

With respect to content and framing of such campaigns, findings of this thesis are inconclusive. An affective appeal seems not to be more effective than a purely informative appeal and vice versa. Activating the warm glow via the affective message did not facilitate as planned in our study; yet, actors along the supply chain need to put the warm glow as well as other personal benefits into consideration when to encourage sustainable consumption. Self-interested motivation is a strong driver and often outweighs altruistic motivation in this context (Birch et al., 2018; Sarti et al., 2018; van Loo et al., 2021). Self-interested motives are of special importance when addressing the average consumer with the aim of establishing certified products in the mainstream (Davies & Gutsche, 2016). When the ethical benefit is exclusively advertised, only a subset of the population – the ethically conscious – is addressed. Even if this subset follows through with their intentions consistently, there would be an upward limit in the market of certified products, defined by the size of that group (Czarnezki et al., 2018). Advertising personal benefits can address a larger group (Dominicis et al., 2017), theoretically shifting this upward limit. Such personal benefits can be more product-specific, for example by highlighting the sensory qualities of the product (Silva et al., 2017) or its health benefits, if given.

In comparison, effects of information on sustainability standards with high consumer awareness are negligible in our settings and therefore not per se recommended. The attention of policymakers and economic actors might shift towards measures to establish purchase habits and loyalty for those established VSS. With respect to purchase frequency our descriptive analyses align with official statistics (Lernoud et al., 2017; TransFair, 2021). Most consumers buy ethically certified products only occasionally, but their WTP is generally high (CHAPTER FIVE). Apart from the limitation of WTP as an outcome variable as discussed in CHAPTER FIVE, this observation points again to the cognitive barriers of individuals when intending to

shop ethically (CHAPTER ONE) and the need for consumer support measures to overcome these. Retailers and companies might introduce loyalty programs specifically for their certified products, so that customers are less likely to switch back to conventional alternatives (Lee & Bateman, 2021). By offering consumers a commitment device, this recommendation builds on the notion to strengthen System 2 in the two-process theory of reasoning. It aligns to the common argumentation as presented in CHAPTER ONE and is, therefore, in contrast to the proposed nudging of System 1.

All in all, this thesis contributes to the discussion about the limits of simple information disclosure in affecting consumer decision-making. Cognitive barriers of individuals combined with a shopping environment filled with countless stimuli, including competing offers and large assortments, require more than just information (WBAE, 2020). Information disclosure is ideally flanked by further policy measures of deeper intensity, such as price incentives via steering taxes or subsidies, or by targeting the regulatory framework of companies, such as the introduction of due diligence laws in various countries. The latter not only increases the responsibility of companies to assure their supply chains are free of human rights violations among others, but it also raises public awareness and reinforces a social norm that is to be realized within society (cf. 'social influence' in CHAPTER ONE).

Lastly, presented findings lend their support to the design of multi-tier VSS in markets that are already familiar with such. Multi-tier VSS have the potential of a broader uptake by both producers and consumers. To sketch in simplified terms, lesser stringency of the medium or low level of a VSS can imply lesser costs of implementation and compliance for producers, allowing for a broader participation. If costs are passed via the market price to consumers, lower costs would result into lesser price increases of certified products for consumers. The consumer segment that especially faces a trade-off between price and their sustainability concerns would be offered products that address their sustainability concerns at comparatively lower prices – therefore, reducing the trade-off.

Following the line of thought that costs are a limiting factor in the spread and uptake of VSS further, certifications based on mass balance supply chains offer another option. Due to avoiding segregated supply chains, costs can be kept lower in the mass balance approach. Consumers do prefer segregated supply chains, because they are more transparent, but low-price shoppers see a value in certifications based on mass balance supply chains (Gassler & Spiller, 2018). Either way, addressing ethical concerns when shopping would be made more inclusive by depending less on household income. However, the multi-level approach needs to guarantee that public benefits of the less stringent levels are still given. Apart from the risk of water-downed VSS been associated with greenwashing by society, their contributions to more ethically sound supply chains might be uncertain (van der Ven, 2019). To mitigate these risks, certifiers need to be transparent about their methods of assessing standards and how benefits are measured. Policy tools can support these efforts by developing assessment methods to improve data validity and by providing an open-access data base with key sustainability indicators that companies and certifiers can use (WBAE 2020, p. 670).

On a concluding note that goes beyond the results of this thesis, when effects of policy instruments on consumer preferences and behaviour are to be measured, more than just retail sales and market shares should enter the equation. As pointed out by Bullock and van der Ven (2020), individuals are not only consumers, but also voters and activists. They cast shadows on the activities of businesses and political actors that are independent of their expenditures in the supermarket (ibid). In the same vein, policies addressing sustainable consumption may address the consumer, but also reach the activist and voter. Individual behaviour in other spheres of life might be affected. Possible spill over effects of policy instruments can involve the crowding-in of other sustainable behaviour or the crowding-out of such because of mechanisms like the aforementioned moral-licensing. Hence, policy instruments ideally do not only target the consumer or a specific behaviour, but work in cohesion with other instruments that address the broader roles of consumers as well.

BIBLIOGRAPHY

Abbott, A., Nandeibam, S., & O'Shea, L. (2013). Recycling: Social norms and warm-glow revisited. Ecological Economics, 90, 10–18. https://doi.org/10.1016/j.ecolecon.2013.02.015

Aertsens, J., Mondelaers, K., Verbeke, W., Buysse, J., & van Huylenbroeck, G. (2011). The influence of subjective and objective knowledge on attitude, motivations and consumption of organic food. British Food Journal, 113(11), 1353–1378. https://doi.org/10.1108/00070701111179988

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

Afrane, G., & Ntiamoah, A. (2011). Use of Pesticides in the Cocoa Industry and Their Impact on the Environment and the Food Chain. In M. Stoytcheva (Ed.), Pesticides in the Modern World - Risks and Benefits. InTech. https://doi.org/10.5772/17921

Ajzen, I. (1991). The theory of planned behaviour. Organizational Behaviour and Human Decision Processes, 50(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Aktar, I. (2013). Disclosure strategies regarding ethically questionable business practices. British Food Journal, 115(1), 162–193. https://doi.org/10.1108/00070701311289939

Anderson, S., Harrison, G. W., Lau, M. I., & Rutström, E. E. (2007). Valuation using multiple price list formats. Applied Economics, 39(6), 675–682. https://doi.org/10.1080/00036840500462046

Anderson, S., Harrison, G. W., Lau, M. I., & Rutström, E. E. (2006). Elicitation using multiple price list formats. Experimental Economics, 9(4), 383–405. https://doi.org/10.1007/s10683-006-7055-6

Andorfer, V. A., & Liebe, U. (2012). Research on Fair Trade Consumption—A Review. Journal of Business Ethics, 106(4), 415–435. https://doi.org/10.1007/s10551-011-1008-5

Andorfer, V. A., & Liebe, U. (2015). Do information, price, or morals influence ethical consumption? A natural field experiment and customer survey on the purchase of Fair Trade coffee. Social Science Research, 52, 330–350. https://doi.org/10.1016/j.ssresearch.2015.02.007

Andreoni, J., & Vesterlund, L. (2001). Which is the Fair Sex? Gender Differences in Altruism. The Quarterly Journal of Economics, 116(1), 293–312. https://doi.org/10.1162/003355301556419

Andreoni, J. (1990). Impure Altruism and Donations to Public Goods: A Theory of Warm-Glow Giving. The Economic Journal, 100(401), 464. https://doi.org/10.2307/2234133

Andreoni, J. (1993). An Experimental Test of the Public-Goods Crowding-Out Hypothesis. American Economic Review, 83(5). https://www.jstor.org/stable/2117563

Andreoni, J., Harbaugh, W. T., & Vesterlund, L. (2010). Altruism in experiments. In S. N. Durlauf & L. E. Blume (Eds.), Behavioural and Experimental Economics (pp. 6–13). London: Palgrave Macmillan UK. https://doi.org/10.1057/9780230280786_2

Annunziata, A., Mariani, A., & Vecchio, R. (2019). Effectiveness of sustainability labels in guiding food choices: Analysis of visibility and understanding among young adults. Sustainable Production and Consumption, 17, 108–115. https://doi.org/10.1016/j.spc.2018.09.005

Antonetti, P., & Maklan, S. (2014). Exploring Postconsumption Guilt and Pride in the Context of Sustainability. Psychology & Marketing, 31(9), 717–735. https://doi.org/10.1002/mar.20730

Ariely, D., Bracha, A., & Meier, S. (2009). Doing Good or Doing Well? Image Motivation and Monetary Incentives in Behaving Prosocially. American Economic Review, 99(1), 544–555. https://doi.org/10.1257/aer.99.1.544

Arnocky, S., Milfont, T. L., & Nicol, J. R. (2013). Time Perspective and Sustainable Behaviour. Environment and Behaviour, 46(5), 556–582. https://doi.org/10.1177/0013916512474987

Arnot, C., Boxall, P. C., & Cash, S. B. (2006). Do Ethical Consumers Care About Price? A Revealed Preference Analysis of Fair Trade Coffee Purchases. Canadian Journal of Agricultural Economics/Revue Canadienne D'agroeconomie, 54(4), 555–565. https://doi.org/10.1111/j.1744-7976.2006.00066.x

Aschemann-Witzel, J., & Grunert, K. G. (2015). Influence of 'soft' versus 'scientific' health information framing and contradictory information on consumers' health inferences and attitudes towards a food supplement. Food Quality and Preference, 42, 90–99. https://doi.org/10.1016/j.foodqual.2015.01.008

Aschemann-Witzel, J., & Niebuhr Aagaard, E. M. (2014). Elaborating on the attitude-behaviour gap regarding organic products: Young Danish consumers and in-store food choice. International Journal of Consumer Studies, 38(5), 550–558. https://doi.org/10.1111/ijcs.12115

Asioli, D., Aschemann-Witzel, J., & Nayga, R. M. (2020). Sustainability-Related Food Labels. Annual Review of Resource Economics, 12(1), 171–185. https://doi.org/10.1146/annurev-resource-100518-094103

Association of German Confectionary Association (2020). Infografik "Rohkakaolieferländer Deutschlands, Netto-Importe 2020". Retrieved from https://www.bdsi.de/zahlen-fakten/rohstoffverarbeitung/ (last accessed on 13 March 2022)

Atkinson, L., & Rosenthal, S. (2014). Signaling the Green Sell: The Influence of Eco-Label Source, Argument Specificity, and Product Involvement on Consumer Trust. Journal of Advertising, 43(1), 33–45. https://doi.org/10.1080/00913367.2013.834803

Auger, P., & Devinney, T. M. (2007). Do What Consumers Say Matter? The Misalignment of Preferences with Unconstrained Ethical Intentions. Journal of Business Ethics, 76(4), 361–383. https://doi.org/10.1007/s10551-006-9287-y

Auld, G. (2014). Constructing Private Governance: The Rise and Evolution of Forest, Coffee, and Fisheries Certification. New Haven: Yale University Press.

Bai, J., Zhang, C., & Jiang, J. (2013). The role of certificate issuer on consumers' willingness-to-pay for milk traceability in China. Agricultural Economics, 44(4-5), 537–544. https://doi.org/10.1111/agec.12037

Baker, S., Thompson, K. E., Engelken, J., & Huntley, K. (2004). Mapping the values driving organic food choice. European Journal of Marketing, 38(8), 995–1012. https://doi.org/10.1108/03090560410539131

Bangsa, A. B., & Schlegelmilch, B. B. (2020). Linking sustainable product attributes and consumer decision-making: Insights from a systematic review. Journal of Cleaner Production, 245, 118902. https://doi.org/10.1016/j.jclepro.2019.118902

Barnes, S. J. (2019). Out of sight, out of mind: Plastic waste exports, psychological distance and consumer plastic purchasing. Global Environmental Change, 58, 101943. https://doi.org/10.1016/j.gloenvcha.2019.101943

Bartley, T. (2007). Institutional Emergence in an Era of Globalization: The Rise of Transnational Private Regulation of Labour and Environmental Conditions. American Journal of Sociology, 113(2), 297–351. https://doi.org/10.1086/518871

Bass, D. A., McFadden, B. R., & Messer, K. D. (2021). A case for measuring negative willingness to pay for consumer goods. Food Policy, 104, 102126. https://doi.org/10.1016/j.foodpol.2021.102126

Becchetti, L., Salustri, F., & Scaramozzino, P. (2018). Nudging and Environmental Corporate Responsibility: A Natural Experiment. SSRN Electronic Journal. Advance online publication. https://doi.org/10.2139/ssrn.3155252

Bennett, R. M., & Blaney, R. J. (2003). Estimating the benefits of farm animal welfare legislation using the contingent valuation method. Agricultural Economics, 29(1), 85–98. https://doi.org/10.1111/j.1574-0862.2003.tb00149.x

Bentler, P. M. (1990). Comparative fit indexes in structural models. Psychological Bulletin, 107(2), 238–246. https://doi.org/10.1037/0033-2909.107.2.238

Bernstein, S., & Cashore, B. (2007). Can non-state global governance be legitimate? An analytical framework. Regulation & Governance, 1(4), 347–371. https://doi.org/10.1111/j.1748-5991.2007.00021.x

Birch, D., Memery, J., & Silva Kanakaratne, M. de (2018). The mindful consumer: Balancing egoistic and altruistic motivations to purchase local food. Journal of Retailing and Consumer Services, 40, 221–228. https://doi.org/10.1016/j.jretconser.2017.10.013

Bissinger, K., & Leufkens, D. (2017). Ethical food labels in consumer preferences. British Food Journal, 119(8), 1801–1814. https://doi.org/10.1108/BFJ-10-2016-0515

Bjälkebring, P., Västfjäll, D., Dickert, S., & Slovic, P. (2016). Greater Emotional Gain from Giving in Older Adults: Age-Related Positivity Bias in Charitable Giving. Frontiers in Psychology, 7, 846. https://doi.org/10.3389/fpsyg.2016.00846

Blankenbach, J. (2020). Voluntary Sustainability Standards and the Sustainable Development Goals. In A. Negi, J. A. Pérez-Pineda, & J. Blankenbach (Eds.), Sustainability Standards and Global Governance (pp. 19–38). Singapore: Springer Singapore. https://doi.org/10.1007/978-981-15-3473-7_2

Blanton, H., & Ikizer, E. G. (2019). Elegant Science Narratives and Unintended Influences: An Agenda for the Science of Science Communication. Social Issues and Policy Review, 13(1), 154–181. https://doi.org/10.1111/sipr.12055

BLE & BÖLN (2019). Ökobarometer 2019. Retrieved from https://www.bmel.de/DE/themen/landwirtschaft/oekologischer-landbau/oekobarometer2019.html (last accessed on 13 March 2022)

Boström, M., Micheletti, M., & Oosterveer, P. (2019). Studying Political Consumerism. In M. Boström, M. Micheletti, P. Oosterveer, (Eds.), The Oxford Handbook of Political Consumerism (xvi-24). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190629038.013.44

Brunner, T. A. (2014). Applying neutralization theory to fair trade buying behaviour. International Journal of Consumer Studies, 38(2), 200–206. https://doi.org/10.1111/ijcs.12081

Bryła, P. (2018). Organic food online shopping in Poland. British Food Journal, 120(5), 1015–1027. https://doi.org/10.1108/BFJ-09-2017-0517

Bullock, G., Johnson, C., & Southwell, B. (2017). Activating values to stimulate organic food purchases: can advertisements increase pro-environmental intentions? Journal of Consumer Marketing, 34(5), 427–441. https://doi.org/10.1108/JCM-12-2015-1643

Bullock, G., & van der Ven, H. (2020). The Shadow of the Consumer: Analyzing the Importance of Consumers to the Uptake and Sophistication of Ratings, Certifications, and Eco-Labels. Organization & Environment, 33(1), 75–95. https://doi.org/10.1177/1086026618803748

Canavari, M., Drichoutis, A. C., Lusk, J. L., & Nayga, R. M. (2019). How to run an experimental auction: a review of recent advances. European Review of Agricultural Economics, 46(5), 862–922. https://doi.org/10.1093/erae/jbz038

Carrero, I., Redondo, R., & Fabra, M. E. (2016). Who is behind the sustainable purchase? The sustainable consumer profile in grocery shopping in Spain. International Journal of Consumer Studies, 40(6), 643–651. https://doi.org/10.1111/ijcs.12287

Carrington, M. J., Neville, B. A., & Whitwell, G. J. (2010). Why Ethical Consumers Don? T Walk Their Talk: Towards a Framework for Understanding the Gap Between the Ethical Purchase Intentions and Actual Buying Behaviour of Ethically Minded Consumers. Journal of Business Ethics, 97(1), 139–158. https://doi.org/10.1007/s10551-010-0501-6

Carrington, M. J., Neville, B. A., & Whitwell, G. J. (2014). Lost in translation: Exploring the ethical consumer intention–behaviour gap. Journal of Business Research, 67(1), 2759–2767. https://doi.org/10.1016/j.jbusres.2012.09.022

Cecchini, L., Torquati, B., & Chiorri, M. (2018). Sustainable agri-food products: A review of consumer preference studies through experimental economics. Agricultural Economics (Zemědělská Ekonomika), 64(No. 12), 554–565. https://doi.org/10.17221/272/2017-AGRICECON

Chekima, B., Oswald, A. I., Wafa, S. A. W. S. K., & Chekima, K. (2017). Narrowing the gap: Factors driving organic food consumption. Journal of Cleaner Production, 166, 1438–1447. https://doi.org/10.1016/j.jclepro.2017.08.086

Chrysochou, P., & Grunert, K. G. (2014). Health-related ad information and health motivation effects on product evaluations. Journal of Business Research, 67(6), 1209–1217. https://doi.org/10.1016/j.jbusres.2013.05.001

Crumpler, H., & Grossman, P. J. (2008). An experimental test of warm glow giving. Journal of Public Economics, 92(5-6), 1011–1021. https://doi.org/10.1016/j.jpubeco.2007.12.014

CTMA (2019). Report on China's tea consumption market. Retrieved from https://mp.weixin.qq.com/s/3lLWT7CYkPNI98BF6KGAgQ (last accessed on 13 March 2022)

Czarnezki, Jason, T., Jönsson, I., & Kuh, K. (2018). Crafting next Generation Eco-Label Policy. Environmental Law, 48(3), 409–452. Retrieved from https://www.jstor.org/stable/10.2307/26507759

Darnall, N., Ji, H., & Vázquez-Brust, D. A. (2018). Third-Party Certification, Sponsorship, and Consumers' Ecolabel Use. Journal of Business Ethics, 150(4), 953–969. https://doi.org/10.1007/s10551-016-3138-2

D'Astous, A., & Mathieu, S. (2008). Inciting consumers to buy fairly-traded products: a field experiment. Journal of Consumer Marketing, 25(3), 149–157. https://doi.org/10.1108/07363760810870644

Davies, I. A., & Gutsche, S. (2016). Consumer motivations for mainstream "ethical" consumption. European Journal of Marketing, 50(7/8), 1326–1347. https://doi.org/10.1108/EJM-11-2015-0795

De Pelsmacker, & Driese. and Rayp G. (2005). Do Consumers Care about Ethics? Willingness to Pay for Fair-Trade Coffee. The Journal of Consumer Affairs, 39(2), 363–385.

DellaVigna, S., List, J. A., Malmendier, U., & Rao, G. (2013). The Importance of Being Marginal: Gender Differences in Generosity. American Economic Review, 103(3), 586–590. https://doi.org/10.1257/aer.103.3.586

Delmas, M. A., & Grant, L. E. (2013). Eco-Labeling Strategies and Price-Premium. Business & Society, 53(1), 6–44. https://doi.org/10.1177/0007650310362254

DeScioli, P., & Krishna, S. (2013). Giving to whom? Altruism in different types of relationships. Journal of Economic Psychology, 34, 218–228. https://doi.org/10.1016/j.joep.2012.10.003

Dessart, F. J., Marandola, G., Hille, S. L., & Thøgersen, J. (2021). Comparing the impact of positive, negative, and graded sustainability labels on purchase decisions. Retrieved from https://publications.jrc.ec.europa.eu/repository/handle/JRC127006 (last accessed on 13 March 2022)

Diamantopoulos, A., Schlegelmilch, B. B., Sinkovics, R. R., & Bohlen, G. M. (2003). Can socio-demographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation. Journal of Business Research, 56(6), 465–480. https://doi.org/10.1016/S0148-2963(01)00241-7

Didier, T., & Lucie, S. (2008). Measuring consumer's willingness to pay for organic and Fair Trade products. International Journal of Consumer Studies, 32(5), 479–490. https://doi.org/10.1111/j.1470-6431.2008.00714.x

Dietz, T., Grabs, J., Chong, A., & Kilian, B. (2020). The impact of voluntary sustainability standards on sustainable coffee production in Latin America (stakeholder summary report). Retrieved from https://www.uni-muenster.de/Transsustain/publications/index.htm (last accessed on 13 March 2022)

Disdier, A.-C., & Marette, S. (2013). Globalisation issues and consumers' purchase decisions for food products: evidence from a laboratory experiment. European Review of Agricultural Economics, 40(1), 23–44. https://doi.org/10.1093/erae/jbr065

Disdier, A.-C., & Marette, S. (2012). How do consumers in developed countries value the environment and workers' social rights in developing countries? Food Policy, 37(1), 1–11. https://doi.org/10.1016/j.foodpol.2011.10.002

Dominicis, S. de, Schultz, P. W., & Bonaiuto, M. (2017). Protecting the Environment for Self-interested Reasons: Altruism Is Not the Only Pathway to Sustainability. Frontiers in Psychology, 8, 1065. https://doi.org/10.3389/fpsyg.2017.01065

Doran, C. J. (2009). The Role of Personal Values in Fair Trade Consumption. Journal of Business Ethics, 84(4), 549–563. https://doi.org/10.1007/s10551-008-9724-1

Dowling, K., Guhl, D., Klapper, D., Spann, M., Stich, L., & Yegoryan, N. (2020). Behavioural biases in marketing. Journal of the Academy of Marketing Science, 48(3), 449–477. https://doi.org/10.1007/s11747-019-00699-x

Dreezens, E., Martijn, C., Tenbült, P., Kok, G., & Vries, N. K. de (2005). Food and values: An examination of values underlying attitudes toward genetically modified- and organically grown food products. Appetite, 44(1), 115–122. https://doi.org/10.1016/j.appet.2004.07.003

Drichoutis, A. C., Klonaris, S., & Papoutsi, G. S. (2017). Do Good Things Come in Small Packages? Bottle Size Effects on Willingness to Pay for Pomegranate Wine and Grape Wine. Journal of Wine Economics, 12(1), 84–104. https://doi.org/10.1017/jwe.2017.3

Drichoutis, A. C., Lazaridis, P., & Nayga, R. M. (2009). Would consumers value food-away-from-home products with nutritional labels? Agribusiness, 25(4), 550–575. https://doi.org/10.1002/agr.20224

Dudley, N., & Alexander, S. (2017). Agriculture and biodiversity: a review. Biodiversity, 18(2-3), 45–49. https://doi.org/10.1080/14888386.2017.1351892

Dunn, E. W., Aknin, L. B., & Norton, M. I. (2014). Prosocial Spending and Happiness. Current Directions in Psychological Science, 23(1), 41–47. https://doi.org/10.1177/0963721413512503

Edinger-Schons, L. M., Sipilä, J., Sen, S., Mende, G., & Wieseke, J. (2018). Are Two Reasons Better Than One? The Role of Appeal Type in Consumer Responses to Sustainable Products. Journal of Consumer Psychology, 28(4), 644–664. https://doi.org/10.1002/jcpy.1032

Emekci, S. (2019). Green consumption behaviours of consumers within the scope of TPB. Journal of Consumer Marketing, 36(3), 410–417. https://doi.org/10.1108/JCM-05-2018-2694

Engel, J., & Szech, N. (2020). A little good is good enough: Ethical consumption, cheap excuses, and moral self-licensing. PloS One, 15(1), e0227036. https://doi.org/10.1371/journal.pone.0227036

Ethical Consumerism Report (2021). Can we consume back better? Retrieved from https://www.ethicalconsumer.org/sites/default/files/inline-files/EC_Market_Report_2021_0.pdf (last accessed on 13 March 2022)

Etumnu, C. E., Foster, K. A., Widmar, N. O., Lusk, J. L., & Ortega, D. L. (2019). Drivers of Online Grocery Shopping. Annual Meeting, July 21-23, Atlanta, Georgia, Agricultural and Applied Economics. Retrieved from https://ageconsearch.umn.edu/record/290858?ln=en (last accessed on 13 March 2022)

European Food Safety Authority (2018). The 2016 European Union report on pesticide residues in food. EFSA Journal. European Food Safety Authority, 16(7), e05348. https://doi.org/10.2903/j.efsa.2018.5348

Evren, Ö., & Minardi, S. (2017). Warm-Glow Giving and Freedom to be Selfish. The Economic Journal, 127(603), 1381–1409. https://doi.org/10.1111/ecoj.12351

Eyting, M., Hosemann, A., & Johannesson, M. (2016). Can monetary incentives increase organ donations? Economics Letters, 142, 56–58. https://doi.org/10.1016/j.econlet.2016.03.005

FAO (2015). World tea production and trade. Current and future development. Retrieved from http://www.fao.org/3/i4480e/i4480e.pdf (last accessed on 13 March 2022)

FAO (2018). Current Market situation and medium term outlook. Intergovernmental group on tea. Retrieved from https://www.fao.org/economic/est/est-commodities/tea/tea-meetings/tea23/en/ (last accessed on 13 March 2022)

Fehse, K., Simmank, F., Gutyrchik, E., & Sztrókay-Gaul, A. (2017). Organic or popular brands—food perception engages distinct functional pathways. An fMRI study. Cogent Psychology, 4(1), 1284392. https://doi.org/10.1080/23311908.2017.1284392

Fennis, B. M., Adriaanse, M. A., Stroebe, W., & Pol, B. (2011). Bridging the intention–behaviour gap: Inducing implementation intentions through persuasive appeals. Journal of Consumer Psychology, 21(3), 302–311. https://doi.org/10.1016/j.jcps.2010.12.003

Ferguson, E., & Flynn, N. (2016). Moral relativism as a disconnect between behavioural and experienced warm glow. Journal of Economic Psychology, 56, 163–175. https://doi.org/10.1016/j.joep.2016.06.002

Ferguson, E., Taylor, M., Keatley, D., Flynn, N., & Lawrence, C. (2012). Blood donors' helping behaviour is driven by warm glow: More evidence for the blood donor benevolence hypothesis. Transfusion, 52(10), 2189–2200. https://doi.org/10.1111/j.1537-2995.2011.03557.x

Fesenfeld, L. P., Wicki, M., Sun, Y., & Bernauer, T. (2020). Policy packaging can make food system transformation feasible. Nature Food, 1(3), 173–182. https://doi.org/10.1038/s43016-020-0047-4

Feucht, Y., & Zander, K. (2017). Consumers' Willingness to Pay for Climate-Friendly Food in European Countries. Proceedings in Food System Dynamics, 360–377. https://doi.org/10.18461/pfsd.2017.1738

Fiankor, D.-D., Flachsbarth, I., Masood, A., & Brümmer, B. (2019). Does GlobalGAP certification promote agrifood exports? European Review of Agricultural Economics, 47(1), 247–272. https://doi.org/10.1093/erae/jbz023

FiBL, & FOAM (2019). The world of organic agriculture statistics and emerging trends 2019. Retrieved from https://www.fibl.org/fileadmin/documents/shop/2020-organic-world-2019.pdf (last accessed on 13 March 2022)

Fox, J. A., Hayes, D. J., & Shogren, J. F. (2002). Consumer Preferences for Food Irradiation: How Favorable and Unfavorable Descriptions Affect Preferences for Irradiated Pork in Experimental Auctions. Journal of Risk and Uncertainty, 24(1), 75–95. https://doi.org/10.1023/A:1013229427237

Frey, B., & Jegen, R. (2002). Motivation Crowding Theory. Journal of Economic Surveys, 15(5), 589–611. https://doi.org/10.1111/1467-6419.00150

Frostling-Henningsson, M., Hedbom, M., & Wilandh, L. (2014). Intentions to buy “organic” not manifested in practice. British Food Journal, 116(5), 872–887. https://doi.org/10.1108/BFJ-11-2010-0190

Fuchs, D., & Kalfagianni, A. (2010). The Causes and Consequences of Private Food Governance. Business and Politics, 12(3), 1–34. https://doi.org/10.2202/1469-3569.1319

Fujimoto, H., & Park, E.-S. (2010). Framing effects and gender differences in voluntary public goods provision experiments. The Journal of Socio-Economics, 39(4), 455–457. https://doi.org/10.1016/j.socec.2010.03.002

Fulponi, L. (2006). Private voluntary standards in the food system: The perspective of major food retailers in OECD countries. Food Policy, 31(1), 1–13. https://doi.org/10.1016/j.foodpol.2005.06.006

Gadema, Z., & Oglethorpe, D. (2011). The use and usefulness of carbon labelling food: A policy perspective from a survey of UK supermarket shoppers. Food Policy, 36(6), 815–822. https://doi.org/10.1016/j.foodpol.2011.08.001

Garnett, T. (2011). Where are the best opportunities for reducing greenhouse gas emissions in the food system (including the food chain)? Food Policy, 36, S23-S32. https://doi.org/10.1016/j.foodpol.2010.10.010

Gassler, B., Meyer-Höfer, M. von, & Spiller, A. (2016). Exploring Consumers' Expectations of Sustainability in Mature and Emerging Markets. Journal of Global Marketing, 29(2), 71–84. https://doi.org/10.1080/08911762.2015.1133869

Gassler, B., & Spiller, A. (2018). Is it all in the MIX? Consumer preferences for segregated and mass balance certified sustainable palm oil. Journal of Cleaner Production, 195, 21–31. https://doi.org/10.1016/j.jclepro.2018.05.039

Ghvanidze, S., Velikova, N., Dodd, T., & Oldewage-Theron, W. (2017). A discrete choice experiment of the impact of consumers’ environmental values, ethical concerns, and health consciousness on food choices. British Food Journal, 119(4), 863–881. https://doi.org/10.1108/BFJ-07-2016-0342

Gifford, K., & Bernard, J. C. (2006). Influencing consumer purchase likelihood of organic food. International Journal of Consumer Studies, 30(2), 155–163. https://doi.org/10.1111/j.1470-6431.2005.00472.x

Gifford, K., & Bernard, J. C. (2011). The effect of information on consumers' willingness to pay for natural and organic chicken. International Journal of Consumer Studies, 35(3), 282–289. https://doi.org/10.1111/j.1470-6431.2010.00929.x

Gifford, R., & Nilsson, A. (2014). Personal and social factors that influence pro-environmental concern and behaviour: A review. International Journal of Psychology: Journal International De Psychologie, 49(3), 141–157. https://doi.org/10.1002/ijop.12034

Gilg, A., Barr, S., & Ford, N. (2005). Green consumption or sustainable lifestyles? Identifying the sustainable consumer. Futures, 37(6), 481–504. https://doi.org/10.1016/j.futures.2004.10.016

Gockowski, J., & Sonwa, D. (2011). Cocoa intensification scenarios and their predicted impact on CO_2 emissions, biodiversity conservation, and rural livelihoods in the Guinea rain forest of West Africa. Environmental Management, 48(2), 307–321. https://doi.org/10.1007/s00267-010-9602-3

Goenka, S., & van Osselaer, S. M. J. (2019). Charities Can Increase the Effectiveness of Donation Appeals by Using a Morally Congruent Positive Emotion. Journal of Consumer Research, 46(4), 774–790. https://doi.org/10.1093/jcr/ucz012

Goetzke, I. B., & Spiller, A. (2014). Health-improving lifestyles of organic and functional food consumers. British Food Journal, 116(3), 510–526. https://doi.org/10.1108/BFJ-03-2012-0073

Gollwitzer, P. M., & Sheeran, P. (2006). Implementation Intentions and Goal Achievement: A Meta-analysis of Effects and Processes. In Advances in Experimental Social Psychology. Advances in Experimental Social Psychology, 38, 69–119. https://doi.org/10.1016/S0065-2601(06)38002-1

Govind, R., Singh, J. J., Garg, N., & D'Silva, S. (2019). Not Walking the Walk: How Dual Attitudes Influence Behavioral Outcomes in Ethical Consumption. Journal of Business Ethics, 155(4), 1195–1214. https://doi.org/10.1007/s10551-017-3545-z

Grabs, J. (2020). Assessing the institutionalization of private sustainability governance in a changing coffee sector. Regulation & Governance, 14(2), 362–387. https://doi.org/10.1111/rego.12212

Grassnick, N., & Brümmer, B. (2021). Do voluntary sustainability standards increase countries' access to cocoa export markets? GlobalFood Discussion Paper Series, 150. Retrieved from https://www.uni-goettingen.de/de/213486.html (last accessed on 13 March 2022)

Grebitus, C., Steiner, B., & Veeman, M. (2015). The roles of human values and generalized trust on stated preferences when food is labeled with environmental footprints: Insights from Germany. Food Policy, 52, 84–91. https://doi.org/10.1016/j.foodpol.2014.06.011

Green, T., & Peloza, J. (2014). Finding the Right Shade of Green: The Effect of Advertising Appeal Type on Environmentally Friendly Consumption. Journal of Advertising, 43(2), 128–141. https://doi.org/10.1080/00913367.2013.834805

Grimm, P. (2010). Social Desirability Bias. In J. Sheth & N. Malhotra (Eds.), Wiley International Encyclopaedia of Marketing. Chichester, UK: John Wiley & Sons, Ltd. https://doi.org/10.1002/9781444316568.wiem02057

Grimmer, M., & Miles, M. P. (2017). With the best of intentions: A large sample test of the intention-behaviour gap in pro-environmental consumer behaviour. International Journal of Consumer Studies, 41(1), 2–10. https://doi.org/10.1111/ijcs.12290

Griskevicius, V., Cantú, S. M., & van Vugt, M. (2012). The Evolutionary Bases for Sustainable Behaviour: Implications for Marketing, Policy, and Social Entrepreneurship. Journal of Public Policy & Marketing, 31(1), 115–128. https://doi.org/10.1509/jppm.11.040

Griskevicius, V., Tybur, J. M., & van den Bergh, B. (2010). Going green to be seen: Status, reputation, and conspicuous conservation. Journal of Personality and Social Psychology, 98(3), 392–404. https://doi.org/10.1037/a0017346

Grunert, K. G., Hieke, S., & Wills, J. (2014). Sustainability labels on food products: Consumer motivation, understanding and use. Food Policy, 44, 177–189. https://doi.org/10.1016/j.foodpol.2013.12.001

Guerreiro, J., Rita, P., & Trigueiros, D. (2015). Attention, emotions and cause-related marketing effectiveness. European Journal of Marketing, 49(11/12), 1728–1750. https://doi.org/10.1108/EJM-09-2014-0543

Hainmueller, J., Hiscox, M. J., & Sequeira, S. (2015). Consumer Demand for Fair Trade: Evidence from a Multistore Field Experiment. Review of Economics and Statistics, 97(2), 242–256. https://doi.org/10.1162/REST_a_00467

Hamm, U., Hemmerling, S., Schleenbecker, R., Spiller, A., Wägeli, S., Cordts, A., Hermann, I., Sonntag, I., Kary, V. (2012). Consumer purchase and consumption behaviour regarding organic food – Analysis of the state of the art - Final Report. Retrieved from https://orgprints.org/id/eprint/20055/4/20055-10OE095-uni_kassel-hamm-2012_final_report.pdf (last accessed on 13 March 2022)

Hansen, P., Schilling, M., & Malthesen, M. (2021). Nudging healthy and sustainable food choices: Three randomized controlled field experiments using a vegetarian lunch-default as a normative signal. Journal of Public Health, 43(2), 392–397. https://doi.org/10.1093/pubmed/fdz154

Hansen, T., Sørensen, M. I., & Eriksen, M.-L. R. (2018). How the interplay between consumer motivations and values influences organic food identity and behaviour. Food Policy, 74, 39–52. https://doi.org/10.1016/j.foodpol.2017.11.003

Hanss, D., Böhm, G., Doran, R., & Homburg, A. (2016). Sustainable Consumption of Groceries: the Importance of Believing that One Can Contribute to Sustainable Development. Sustainable Development, 24(6), 357–370. https://doi.org/10.1002/sd.1615

Harbaugh, W. T., Mayr, U., & Burghart, D. R. (2007). Neural responses to taxation and voluntary giving reveal motives for charitable donations. Science, 316(5831), 1622–1625. https://doi.org/10.1126/science.1140738

Hartikainen, H., Roininen, T., Katajajuuri, J.-M., & Pulkkinen, H. (2014). Finnish consumer perceptions of carbon footprints and carbon labelling of food products. Journal of Cleaner Production, 73, 285–293. https://doi.org/10.1016/j.jclepro.2013.09.018

Hartmann, P., Eisend, M., Apaolaza, V., & D'Souza, C. (2017). Warm glow vs. altruistic values: How important is intrinsic emotional reward in proenvironmental behavior? Journal of Environmental Psychology, 52, 43–55. https://doi.org/10.1016/j.jenvp.2017.05.006

Hashem, S., Migliore, G., Schifani, G., Schimmenti, E., & Padel, S. (2018). Motives for buying local, organic food through English box schemes. British Food Journal, 120(7), 1600–1614. https://doi.org/10.1108/BFJ-08-2017-0426

Hemmerling, S., Hamm, U., & Spiller, A. (2015). Consumption behaviour regarding organic food from a marketing perspective—a literature review. Organic Agriculture, 5(4), 277–313. https://doi.org/10.1007/s13165-015-0109-3

Henderson, R., & Nellemann, F. (2012). Sustainable Tea at Unilever, Harvard Business School. Retrieved from https://hbsp.harvard.edu/product/712438-PDF-ENG (last accessed on 13 March 2022)

Hernández, B., Jiménez, J., & José Martín, M. (2011). Age, gender and income: do they really moderate online shopping behaviour? Online Information Review, 35(1), 113–133. https://doi.org/10.1108/14684521111113614

Horne, R. E. (2009). Limits to labels: The role of eco-labels in the assessment of product sustainability and routes to sustainable consumption. International Journal of Consumer Studies, 33(2), 175–182. https://doi.org/10.1111/j.1470-6431.2009.00752.x

Hoyer, W. D. (1984). An Examination of Consumer Decision Making for a Common Repeat Purchase Product. Journal of Consumer Research, 11(3), 822. https://doi.org/10.1086/209017

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling: A Multidisciplinary Journal, 6(1), 1–55. https://doi.org/10.1080/10705519909540118

Hughner, R. S., McDonagh, P., Prothero, A., Shultz, C. J., & Stanton, J. (2007). Who are organic food consumers? A compilation and review of why people purchase organic food. Journal of Consumer Behaviour, 6(2-3), 94–110. https://doi.org/10.1002/cb.210

ILO (2016). A Study Report on Working Conditions of Tea Plantation Workers in Bangladesh. Dhaka: International Labour Organization. Retrieved from https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-dhaka/documents/publication/wcms_563692.pdf (last accessed on 13 March 2022)

ILO (2017). Global estimates of child labour: results and trends, 2012-2016. Retrieved from https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_575499.pdf (last accessed on 13 March 2022)

ILO (2018). Future of Work for Tea Smallholders in Sri Lanka. Colombo: International Labour Organization. Retrieved from https://www.ilo.org/colombo/whatwedo/publications/WCMS_654641/lang--en/index.htm (last accessed on 13 March 2022)

ILO (2020). Wages and working conditions in the tea sector: the case of India, Indonesia and Viet Nam. Geneva: International Labour Organization. Retrieved from https://www.ilo.org/global/docs/WCMS_765135/lang--en/index.htm (last accessed on 13 March 2022)

ILO, & UNICEF (2021). Child labour global estimates 2020, trends and the road forward. Retrieved from https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---ipec/documents/publication/wcms_797515.pdf (last accessed on 13 March 2022)

Inman, J. J., Winer, R. S., & Ferraro, R. (2009). The Interplay among Category Characteristics, Customer Characteristics, and Customer Activities on in-Store Decision Making. Journal of Marketing, 73(5), 19–29. https://doi.org/10.1509/jmkg.73.5.19

Iweala, S., Spiller, A., & Meyerding, S. (2019). Buy good, feel good? The influence of the warm glow of giving on the evaluation of food items with ethical claims in the U.K. and Germany. Journal of Cleaner Production, 215(10), 315–328. https://doi.org/10.1016/j.jclepro.2018.12.266

Jin, X., Wang, H., Wang, T., Li, Y. [Yang], & Deng, S. (2015). Why Chinese Elites buy what they buy. International Journal of Market Research, 57(6), 877–908. https://doi.org/10.2501/IJMR-2015-041

Jinkins, D. (2016). Conspicuous consumption in the United States and China. Journal of Economic Behaviour & Organization, 127, 115–132. https://doi.org/10.1016/j.jebo.2016.03.018

Johe, M. H., & Bhullar, N. (2016). To buy or not to buy: The roles of self-identity, attitudes, perceived behavioural control and norms in organic consumerism. Ecological Economics, 128, 99–105. https://doi.org/10.1016/j.ecolecon.2016.02.019

Johnston, J. (2008). The citizen-consumer hybrid: Ideological tensions and the case of Whole Foods Market. Theory and Society, 37(3), 229–270. https://doi.org/10.1007/s11186-007-9058-5

Joireman, J., Balliet, D., Sprott, D., Spangenberg, E., & Schultz, J. (2008). Consideration of future consequences, ego-depletion, and self-control: Support for distinguishing between CFC-Immediate and CFC-Future sub-scales. Personality and Individual Differences, 45(1), 15–21. https://doi.org/10.1016/j.paid.2008.02.011

Jolliffe, I. T. (Ed.) (2002). Principal Component Analysis. Springer Series in Statistics. New York: Springer-Verlag. https://doi.org/10.1007/b98835

Jolliffe, I., & Cadima, J. (2016). Principal component analysis: A review and recent developments. Philosophical Transactions. Series A, Mathematical, Physical, and Engineering Sciences, 374(2065), 20150202. https://doi.org/10.1098/rsta.2015.0202

Jürkenbeck, K., Spiller, A., & Schulze, M. (2021). Climate change awareness of the young generation and its impact on their diet. Cleaner and Responsible Consumption, 3, 100041. https://doi.org/10.1016/j.clrc.2021.100041

Kahneman, D. (2003). A Psychological Perspective on Economics. American Economic Review, 93(2), 162–168. https://doi.org/10.1257/000282803321946985

Kahneman, D., & Knetsch, D. (1992). Valuing Public Goods: The Purchase of Moral Satisfaction. Journal of Environmental Economics and Management, 22, 57–70. https://doi.org/10.1016/0095-0696(92)90019-S

Karlan, D., & Wood, D. H. (2017). The effect of effectiveness: Donor response to aid effectiveness in a direct mail fundraising experiment. Journal of Behavioural and Experimental Economics, 66, 1–8. https://doi.org/10.1016/j.socec.2016.05.005

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

Kendall, H., Kuznesof, S., Dean, M., Chan, M.-Y., Clark, B., Home, R., . . . Frewer, L. (2019). Chinese consumer's attitudes, perceptions and behavioural responses towards food fraud. Food Control, 95, 339–351. https://doi.org/10.1016/j.foodcont.2018.08.006

Kettner, S. E., & Waichman, I. (2016). Old age and prosocial behaviour: Social preferences or experimental confounds? Journal of Economic Psychology, 53, 118–130. https://doi.org/10.1016/j.joep.2016.01.003

Kim, J.-E., & Johnson, K. K. P. (2013). The Impact of Moral Emotions on Cause-Related Marketing Campaigns: A Cross-Cultural Examination. Journal of Business Ethics, 112(1), 79–90. https://doi.org/10.1007/s10551-012-1233-6

Knight, J., Gao, H., Garrett, T., & Deans, K. (2008). Quest for social safety in imported foods in China: Gatekeeper perceptions. Appetite, 50(1), 146–157. https://doi.org/10.1016/j.appet.2007.06.010

Knößlsdorfer, I., Sellare, J., & Qaim, M. (2021). Effects of Fairtrade on farm household food security and living standards: Insights from Côte d'Ivoire. Global Food Security, 29, 100535. https://doi.org/10.1016/j.gfs.2021.100535

Kotchen, M. J. (2005). Impure public goods and the comparative statics of environmentally friendly consumption. Journal of Environmental Economics and Management, 49(2), 281–300. https://doi.org/10.1016/j.jeem.2004.05.003

Kotchen, M. J. (2006). Green Markets and Private Provision of Public Goods. Journal of Political Economy, 114(4), 816–834. https://doi.org/10.1086/506337

Krumbiegel, K., Maertens, M., & Wollni, M. (2018). The Role of Fairtrade Certification for Wages and Job Satisfaction of Plantation Workers. World Development, 102, 195–212. https://doi.org/10.1016/j.worlddev.2017.09.020

Lades, L. K. (2014). Impulsive consumption and reflexive thought: Nudging ethical consumer behaviour. Journal of Economic Psychology, 41, 114–128. https://doi.org/10.1016/j.joep.2013.01.003

Ladhari, R., & Tchetgna, N. M. (2017). Values, socially conscious behaviour and consumption emotions as predictors of Canadians' intent to buy fair trade products. International Journal of Consumer Studies, 41(6), 696–705. https://doi.org/10.1111/ijcs.12382

Lancaster, K. J. (1966). A New Approach to Consumer Theory. Journal of Political Economy, 74(2), 132–157. https://www.journals.uchicago.edu/doi/abs/10.1086/259131

Lange, C., Combris, P., Issanchou, S., & Schlich, P. (2015). Impact of information and in-home sensory exposure on liking and willingness to pay: The beginning of Fairtrade labeled coffee in France. Food Research International (Ottawa, Ont.), 76(Pt 3), 317–324. https://doi.org/10.1016/j.foodres.2015.06.017

Langen, N., & Adenaeuer, L. (2013). Where does the Fair Trade price premium go? Confronting consumers' request with reality. Social Enterprise Journal, 9(3), 293–314. https://doi.org/10.1108/SEJ-08-2012-0031

LeBaron, G. (2018). The Global Business of Forced Labour - Report of Findings. Retrieved from http://globalbusinessofforcedlabour.ac.uk/wp-content/uploads/2018/05/Report-of-Findings-Global-Business-of-Forced-Labour.pdf (last accessed on 13 March 2022)

Lee, J. Y., Han, D. B., Nayga, R. M., & Lim, S. S. (2011). Valuing traceability of imported beef in Korea: an experimental auction approach Australian Journal of Agricultural and Resource Economics, 55(3), 360–373. https://doi.org/10.1111/j.1467-8489.2011.00553.x

Lee, Y., & Bateman, A. (2021). The competitiveness of fair trade and organic versus conventional coffee based on consumer panel data. Ecological Economics, 184, 106986. https://doi.org/10.1016/j.ecolecon.2021.106986

Lemken, D., Knigge, M., Meyerding, S., & Spiller, A. (2017). The Value of Environmental and Health Claims on New Legume Products: A Non-Hypothetical Online Auction. Sustainability, 9(8), 1340. https://doi.org/10.3390/su9081340

Lemken, D., Zühlsdorf, A., & Spiller, A. (2021). Improving Consumers' Understanding and Use of Carbon Footprint Labels on Food: Proposal for a Climate Score Label. EuroChoices, 20(2), 23–29. https://doi.org/10.1111/1746-692X.12321

Lernoud, J., Potts, J., Sampson, G., Voora, V., Willer H., & Wozniak, J. (2015). The State of Sustainable Markets: Statistics and Emerging Trends 2015. ITC, Geneva. Retrieved from https://www.intracen.org/publication/The-State-of-Sustainable-Markets/ (last accessed 13 March 2022)

Lernoud, J., Potts, J., Sampson, G., Garibay, S., Lynch, M., Voora, V., Willer, H., & Wozniak, J. (2017). The state of sustainable markets 2017: Statistics and emerging trends. ITC, Geneva. Retrieved from

https://www.intracen.org/publication/The-State-of-Sustainable-Markets-2017-Statistics-and-Emerging-Trends/ (last accessed 13 March 2022)

Li, Y., Lu, Y., Zhang, X., Liu, L., Wang, M., & Jiang, X. (2016). Propensity of green consumption behaviours in representative cities in China. Journal of Cleaner Production, 133, 1328–1336. https://doi.org/10.1016/j.jclepro.2016.06.012

Liebe, U. (2007). Zahlungsbereitschaft für kollektive Umweltgüter: Soziologische und ökonomische Analysen. Springer Verlag.

Liebe, U., Preisendörfer, P., & Meyerhoff, J. (2011). To Pay or Not to Pay: Competing Theories to Explain Individuals' Willingness to Pay for Public Environmental Goods. Environment and Behavior, 43(1), 106–130. https://doi.org/10.1177/0013916509346229

Lim, W. M. (2017). Inside the sustainable consumption theoretical toolbox: Critical concepts for sustainability, consumption, and marketing. Journal of Business Research, 78, 69–80. https://doi.org/10.1016/j.jbusres.2017.05.001

Linder, N. S., Uhl, G., Fliessbach, K., Trautner, P., Elger, C. E., & Weber, B. (2010). Organic labeling influences food valuation and choice. NeuroImage, 53(1), 215–220. https://doi.org/10.1016/j.neuroimage.2010.05.077

Lissitsa, S., & Kol, O. (2016). Generation X vs. Generation Y – A decade of online shopping. Journal of Retailing and Consumer Services, 31, 304–312. https://doi.org/10.1016/j.jretconser.2016.04.015

Liu, R., Pieniak, Z., & Verbeke, W. (2013). Consumers' attitudes and behaviour towards safe food in China: A review. Food Control, 33(1), 93–104. https://doi.org/10.1016/j.foodcont.2013.01.051

Loeb, K. L., Radnitz, C., Keller, K., Schwartz, M. B., Marcus, S., Pierson, R. N., . . . DeLaurentis, D. (2017). The application of defaults to optimize parents' health-based choices for children. Appetite, 113, 368–375. https://doi.org/10.1016/j.appet.2017.02.039

Lombardi, G. V., Berni, R., & Rocchi, B. (2017). Environmental friendly food. Choice experiment to assess consumer's attitude toward "climate neutral" milk: The role of communication. Journal of Cleaner Production, 142, 257–262. https://doi.org/10.1016/j.jclepro.2016.05.125

Long, M. A., & Murray, D. L. (2013). Ethical Consumption, Values Convergence/Divergence and Community Development. Journal of Agricultural and Environmental Ethics, 26(2), 351–375. https://doi.org/10.1007/s10806-012-9384-0

Loureiro, M. L., & Lotade, J. (2005). Do fair trade and eco-labels in coffee wake up the consumer conscience? Ecological Economics, 53(1), 129–138. https://doi.org/10.1016/j.ecolecon.2004.11.002

Luchs, M. G., & Kumar, M. (2017). "Yes, but this Other One Looks Better/Works Better": How do Consumers Respond to Trade-offs Between Sustainability and Other Valued Attributes? Journal of Business Ethics, 140(3), 567–584. https://doi.org/10.1007/s10551-015-2695-0

Luckstead, J., Snell, H. A., Nalley, L. L., Nayga, R. M. & Sarpaning, J. (2021). A multi-country study on consumers' valuation for child-labor-free chocolate: Implications for child labor in cocoa production. Applied Economic Perspectives and Policy. Advance online publication. https://doi.org/10.1002/aepp.13165

Lusk, J. L. (2018). Separating Myth from Reality: An Analysis of Socially Acceptable Credence Attributes. Annual Review of Resource Economics, 10(1), 65–82. https://doi.org/10.1146/annurev-resource-100517-023153

Lusk, J. L., & Briggeman, B. C. (2009). Food Values. American Journal of Agricultural Economics, 91(1), 184–196. https://doi.org/10.1111/j.1467-8276.2008.01175.x

Lusk, J. L., Fox, J. A., Schroeder, T. C., Mintert, J., & Koohmaraie, M. (2001). In-Store Valuation of Steak Tenderness. American Journal of Agricultural Economics, 83(3), 539–550. https://doi.org/10.1111/0002-9092.00176

Lusk, J. L., Nilsson, T., & Foster, K. (2007). Public Preferences and Private Choices: Effect of Altruism and Free Riding on Demand for Environmentally Certified Pork. Environmental and Resource Economics, 36(4), 499–521. https://doi.org/10.1007/s10640-006-9039-6

Ma, Y. J., & Lee, H.-H. (2012). Understanding consumption behaviours for fair trade non-food products: focusing on self-transcendence and openness to change values. International Journal of Consumer Studies, 36(6), 622–634. https://doi.org/10.1111/j.1470-6431.2011.01037.x

Maertens, M. (2019). Fairtrade does not walk the talk. Nature Sustainability, 2(7), 549–550. https://doi.org/10.1038/s41893-019-0332-0

Magnusson, M. K., Arvola, A., Hursti, U.-K. K., Åberg, L., & Sjödén, P.-O. (2003). Choice of organic foods is related to perceived consequences for human health and to environmentally friendly behaviour. Appetite, 40(2), 109–117. https://doi.org/10.1016/S0195-6663(03)00002-3

Marchand, A., Walker, S., & Cooper, T. (2010). Beyond Abundance: Self-Interest Motives for Sustainable Consumption in Relation to Product Perception and Preferences. Sustainability, 2(5), 1431–1447. https://doi.org/10.3390/su2051431

Marchi, E. de, Caputo, V., Nayga, R. M. , & Banterle, A. (2016). Time preferences and food choices: Evidence from a choice experiment. Food Policy, 62, 99–109. https://doi.org/10.1016/j.foodpol.2016.05.004

Matthes, J., Wonneberger, A., & Schmuck, D. (2014). Consumers' green involvement and the persuasive effects of emotional versus functional ads. Journal of Business Research, 67(9), 1885–1893. https://doi.org/10.1016/j.jbusres.2013.11.054

McFadden, J. R., & Huffman, W. E. (2017). Willingness-to-pay for natural, organic, and conventional foods: The effects of information and meaningful labels. Food Policy, 68, 214–232. https://doi.org/10.1016/j.foodpol.2017.02.007

Meemken, E.-M. (2020). Do smallholder farmers benefit from sustainability standards? A systematic review and meta-analysis. Global Food Security, 26, 100373. https://doi.org/10.1016/j.gfs.2020.100373

Meemken, E.-M., Barrett, C. B., Michelson, H. C., Qaim, M., Reardon, T., & Sellare, J. (2021). Sustainability standards in global agrifood supply chains. Nature Food, 2(10), 758–765. https://doi.org/10.1038/s43016-021-00360-3

Meier, C., Sampson, G., Larrea, C., Schlatter, B., Voora, V., Dang, D., Bermudez, S., Wozniak J. & Willer, H. (2020). The State of Sustainable Markets 2020: Statistics and Emerging Trends, ITC, Geneva. Retrieved from https://www.intracen.org/publication/Sustainable-Markets-2020/ (last accessed 13 March 2022)

Menges, R., Schroeder, C., & Traub, S. (2005). Altruism, Warm Glow and the Willingness-to-Donate for Green Electricity: An Artefactual Field Experiment. Environmental and Resource Economics, 31(4), 431–458. https://doi.org/10.1007/s10640-005-3365-y

Meyerding, S. G., & Merz, N. (2018). Consumer preferences for organic labels in Germany using the example of apples – Combining choice-based conjoint analysis and eye-tracking measurements. Journal of Cleaner Production, 181, 772–783. https://doi.org/10.1016/j.jclepro.2018.01.235

Meyer-Höfer, M. von, Wense, V. von der, & Spiller, A. (2015). Characterising convinced sustainable food consumers. British Food Journal, 117(3), 1082–1104. https://doi.org/10.1108/BFJ-01-2014-0003

Michaelidou, N., & Hassan, L. M. (2008). The role of health consciousness, food safety concern and ethical identity on attitudes and intentions towards organic food. International Journal of Consumer Studies, 32(2), 163–170. https://doi.org/10.1111/j.1470-6431.2007.00619.x

Miller, G. A. (1956). The Magical Number Seven, Plus or Minus Two Some Limits on Our Capacity for Processing Information. Psychological Review, 63(2), 81–97. https://doi.org/10.1037/h0043158

Miller, K. M., Hofstetter, R., Krohmer, H., & Zhang, Z. J. (2011). How Should Consumers' Willingness to Pay be Measured? An Empirical Comparison of State-of-the-Art Approaches. Journal of Marketing Research, 48(1), 172–184. https://doi.org/10.1509/jmkr.48.1.172

Mimouni Chaabane, A., & Parguel, B. (2016). The double-edge effect of retailers' cause-related marketing. International Journal of Retail & Distribution Management, 44(6), 607–626. https://doi.org/10.1108/IJRDM-08-2015-0126

Moll, J., Krueger, F., Zahn, R., Pardini, M., Oliveira-Souza, R. de, & Grafman, J. (2006). Human fronto-mesolimbic networks guide decisions about charitable donation. Proceedings of the National Academy of Sciences of the United States of America, 103(42), 15623–15628. https://doi.org/10.1073/pnas.0604475103

Moon, S.-J., Costello, J. P., & Koo, D.-M. (2017). The impact of consumer confusion from eco-labels on negative WOM, distrust, and dissatisfaction. International Journal of Advertising, 36(2), 246–271. https://doi.org/10.1080/02650487.2016.1158223

Moser, A. K. (2016). Consumers' purchasing decisions regarding environmentally friendly products: An empirical analysis of German consumers. Journal of Retailing and Consumer Services, 31, 389–397. https://doi.org/10.1016/j.jretconser.2016.05.006

Müller, C. E., & Gaus, H. (2015). Consumer Response to Negative Media Information About Certified Organic Food Products. Journal of Consumer Policy, 38(4), 387–409. https://doi.org/10.1007/s10603-015-9299-z

Nederkoorn, C., Guerrieri, R., Havermans, R. C., Roefs, A., & Jansen, A. (2009). The interactive effect of hunger and impulsivity on food intake and purchase in a virtual supermarket. International Journal of Obesity (2005), 33(8), 905–912. https://doi.org/10.1038/ijo.2009.98

Ní Choisdealbha, Á., & Lunn, P. D. (2020). Green and Simple: Disclosures on Eco-labels Interact with Situational Constraints in Consumer Choice. Journal of Consumer Policy, 43(4), 699–722. https://doi.org/10.1007/s10603-020-09465-x

NORC (2020). Assessing Progress in Reducing Child Labor in Cocoa Production in Cocoa Growing Areas of Côte d'Ivoire and Ghana. Retrieved from https://www.norc.org/PDFs/Cocoa%20Report/NORC%202020%20Cocoa%20Report_English.pdf (last accessed 13 March 2022)

Norris, K., Asase, A., Collen, B., Gockowksi, J., Mason, J., Phalan, B., & Wade, A. (2010). Biodiversity in a forest-agriculture mosaic – The changing face of West African rainforests. Biological Conservation, 143(10), 2341–2350. https://doi.org/10.1016/j.biocon.2009.12.032

Nunes, P. A., & Schokkaert, E. (2003). Identifying the warm glow effect in contingent valuation. Journal of Environmental Economics and Management, 45(2), 231–245. https://doi.org/10.1016/S0095-0696(02)00051-7

O'Connor, E. L., Sims, L., & White, K. M. (2017). Ethical food choices: Examining people's Fair Trade purchasing decisions. Food Quality and Preference, 60, 105–112. https://doi.org/10.1016/j.foodqual.2017.04.001

Onel, N., & Mukherjee, A. (2016). Consumer knowledge in pro-environmental behavior. World Journal of Science, Technology and Sustainable Development, 13(4), 328–352. https://doi.org/10.1108/WJSTSD-01-2016-0004

Ortega, D. L., Wang, H. H., Olynk, N. J., Wu, L., & Bai, J. (2012). Chinese Consumers' Demand for Food Safety Attributes: A Push for Government and Industry Regulations. American Journal of Agricultural Economics, 94(2), 489–495. https://doi.org/10.1093/ajae/aar074

Ottoni-Wilhelm, M., Vesterlund, L., & Xie, H. (2017). Why Do People Give? Testing Pure and Impure Altruism. American Economic Review, 107(11), 3617–3633. https://doi.org/10.1257/aer.20141222

Padel, S., & Foster, C. (2005). Exploring the gap between attitudes and behaviour. British Food Journal, 107(8), 606–625. https://doi.org/10.1108/00070700510611002

Panzone, L., Hilton, D., Sale, L., & Cohen, D. (2016). Socio-demographics, implicit attitudes, explicit attitudes, and sustainable consumption in supermarket shopping. Journal of Economic Psychology, 55, 77–95. https://doi.org/10.1016/j.joep.2016.02.004

Pei, X., Tandon, A., Alldrick, A., Giorgi, L., Huang, W., & Yang, R. (2011). The China melamine milk scandal and its implications for food safety regulation. Food Policy, 36(3), 412–420. https://doi.org/10.1016/j.foodpol.2011.03.008

Peloza, J., White, K., & Shang, J. (2013). Good and Guilt-Free: The Role of Self-Accountability in Influencing Preferences for Products with Ethical Attributes. Journal of Marketing, 77(1), 104–119. https://doi.org/10.1509/jm.11.0454

Pelsmacker, P. de, Janssens, W., & Mielants, C. (2005). Consumer values and fair-trade beliefs, attitudes and buying behaviour. International Review on Public and Nonprofit Marketing, 2(2), 50–69.

Peter, P. C., & Honea, H. (2012). Targeting Social Messages with Emotions of Change: The Call for Optimism. Journal of Public Policy & Marketing, 31(2), 269–283. https://doi.org/10.1509/jppm.11.098

Poelmans, E., & Rousseau, S. (2016). How do chocolate lovers balance taste and ethical considerations? British Food Journal, 118(2), 343–361. https://doi.org/10.1108/BFJ-06-2015-0208

Potter, C., Bastounis, A., Hartmann-Boyce, J., Stewart, C., Frie, K., Tudor, K., . . . Jebb, S. A. (2021). The Effects of Environmental Sustainability Labels on Selection, Purchase, and Consumption of Food and Drink Products: A Systematic Review. Environment and Behavior, 53(8), 891–925. https://doi.org/10.1177/0013916521995473

Prokop, P. (2018). Tea plantations as a driving force of long-term land use and population changes in the Eastern Himalayan piedmont. Land Use Policy, 77, 51–62. https://doi.org/10.1016/j.landusepol.2018.05.035

Rabin, M. (2002). A perspective on psychology and economics. European Economic Review, 46(4-5), 657–685. https://doi.org/10.1016/S0014-2921(01)00207-0

Rana, J., & Paul, J. (2017). Consumer behavior and purchase intention for organic food: A review and research agenda. Journal of Retailing and Consumer Services, 38, 157–165. https://doi.org/10.1016/j.jretconser.2017.06.004

Ricci, E. C., Banterle, A., & Stranieri, S. (2018). Trust to Go Green: An Exploration of Consumer Intentions for Eco-friendly Convenience Food. Ecological Economics, 148, 54–65. https://doi.org/10.1016/j.ecolecon.2018.02.010

Rimkus, M. (2014). Welternährung, Nutztierschutz und Lebensmittelsicherheit. Eine monetäre Bewertung in Entwicklungs- und Schwellenländern. UA Ruhr Studies on Development and Global Governance (66). Logos Verlag, Berlin.

Rousseau, S. (2015). The role of organic and fair trade labels when choosing chocolate. Food Quality and Preference, 44, 92–100. https://doi.org/10.1016/j.foodqual.2015.04.002

Rousu, M., Huffman, W. E., Shogren, J. F., & Tegene, A. (2007). Effects and Value of Verifiable Information in a Controversial Market: Evidence from Lab Auctions of Genetically modified food. Economic Inquiry, 45(3), 409–432. https://doi.org/10.1111/j.1465-7295.2007.00017.x

Rowlatt, J. (2016). The dark history behind India and the UK's favourite drink. Retrieved from https://www.bbc.com/news/world-asia-india-36781368 (last accessed 13 March 2022)

Saber, M., & Weber, A. (2019). How do supermarkets and discounters communicate about sustainability? A comparative analysis of sustainability reports and in-store communication. International Journal of Retail & Distribution Management, 47(11), 1181–1202. https://doi.org/10.1108/IJRDM-08-2018-0156

Sarti, S., Darnall, N., & Testa, F. (2018). Market segmentation of consumers based on their actual sustainability and health-related purchases. Journal of Cleaner Production, 192, 270–280. https://doi.org/10.1016/j.jclepro.2018.04.188

Sawtooth Software Inc. (2021). The CBC/HB System for Hierarchical Bayes Estimation. Retrieved from https://sawtoothsoftware.com/resources/technical-papers/cbc-hb-technical-paper (last accessed 13 March 2022)

Schleifer, P., Fiorini, M., & Auld, G. (2019). Transparency in transnational governance: The determinants of information disclosure of voluntary sustainability programs. Regulation & Governance, 13(4), 488–506. https://doi.org/10.1111/rego.12241

Schleifer, P., & Sun, Y. (2020). Reviewing the impact of sustainability certification on food security in developing countries. Global Food Security, 24, 100337. https://doi.org/10.1016/j.gfs.2019.100337

Schulze, M., Spiller, A., & Jürkenbeck, K. (2021). Politicised opinion leaders in the younger generation: to meat or not to meat? British Food Journal, ahead-of-print(ahead-of-print). https://doi.org/10.1108/BFJ-07-2021-0817

Schulze, M., Spiller, A., & Risius, A. (2019). Food Retailers as Mediating Gatekeepers between Farmers and Consumers in the Supply Chain of Animal Welfare Meat - Studying Retailers' Motives in Marketing Pasture-Based Beef. Food Ethics, 3(1-2), 41–52. https://doi.org/10.1007/s41055-019-00040-w

Schuster, M., & Maertens, M. (2015). The Impact of Private Food Standards on Developing Countries' Export Performance: An Analysis of Asparagus Firms in Peru. World Development, 66, 208–221. https://doi.org/10.1016/j.worlddev.2014.08.019

Schwartz, S. H. (1992). Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries. In Advances in Experimental Social Psychology. Advances in Experimental Social Psychology (25), 1–65. https://doi.org/10.1016/S0065-2601(08)60281-6

Schwartz, S. H., Melech, G., Lehmann, A., Burgess, S., Harris, M., & Owens, V. (2001). Extending the Cross-Cultural Validity of the Theory of Basic Human Values with a Different Method of Measurement. Journal of Cross-Cultural Psychology, 32(5), 519–542. https://doi.org/10.1177/0022022101032005001

Scott, S., Si, Z., Schumilas, T., & Chen, A. (2014). Contradictions in state- and civil society-driven developments in China's ecological agriculture sector. Food Policy, 45, 158–166. https://doi.org/10.1016/j.foodpol.2013.08.002

Sellare, J., Meemken, E.-M., & Qaim, M. (2020). Fairtrade, Agrochemical Input Use, and Effects on Human Health and the Environment. Ecological Economics, 176, 106718. https://doi.org/10.1016/j.ecolecon.2020.106718

Silva, Nayga, R. M., Campbell, B. L., & Park, J. L. (2011). Revisiting cheap talk with new evidence from a field experiment. Journal of Agricultural and Resource Economics, 280–291. https://www.jstor.org/stable/23243081

Silva, A. R. d. A., Bioto, A. S., Efraim, P., & Queiroz, G. d. C. (2017). Impact of sustainability labeling in the perception of sensory quality and purchase intention of chocolate consumers. Journal of Cleaner Production, 141, 11–21. https://doi.org/10.1016/j.jclepro.2016.09.024

Singer, P. (2015). The Most Good You Can Do: How Effective Altruism Is Changing Ideas About Living Ethically. Yale University Press.

Small, D. A., & Verrochi, N. M. (2009). The Face of Need: Facial Emotion Expression on Charity Advertisements. Journal of Marketing Research, 46(6), 777–787. https://doi.org/10.1509/jmkr.46.6.777

Sørensen, B. T., Barcellos, M. D. d., Olsen, N. V., Verbeke, W., & Scholderer, J. (2012). Systems of attitudes towards production in the pork industry. A cross-national study. Appetite, 59(3), 885–897. https://doi.org/10.1016/j.appet.2012.08.021

Soutschek, A., Burke, C. J., Raja Beharelle, A., Schreiber, R., Weber, S. C., Karipidis, I. I., . . . Tobler, P. N. (2017). The dopaminergic reward system underpins gender differences in social preferences. Nature Human Behaviour, 1(11), 819–827. https://doi.org/10.1038/s41562-017-0226-y

Sparks, P., & Shepherd, R. (1992). Self-Identity and the Theory of Planned Behavior: Assesing the Role of Identification with "Green Consumerism". Social Psychology Quarterly, 55(4), 388. https://doi.org/10.2307/2786955

Springmann, M., Clark, M., Mason-D'Croz, D., Wiebe, K., Bodirsky, B. L., Lassaletta, L., . . . Willett, W. (2018). Options for keeping the food system within environmental limits. Nature, 562(7728), 519–525. https://doi.org/10.1038/s41586-018-0594-0

Stanovich, K. E., & West, R. F. (2000). Individual differences in reasoning: Implications for the rationality debate? The Behavioral and Brain Sciences, 23(5), 645-65; discussion 665-726. https://doi.org/10.1017/s0140525x00003435

Stevens, C. J. (2019). Nitrogen in the environment. Science, 363(6427), 578–580. https://doi.org/10.1126/science.aav8215

Stiefenhofer, P., & Zhang, W. (2022). Conspicuous ethics: a Veblen effect condition for ethical consumption goods. Applied Economics Letters, 29(1), 72–74. https://doi.org/10.1080/13504851.2020.1855306

Stolle, D., & Micheletti, M. (2013). Political consumerism: global responsibility in action. New York: Cambridge University Press.

Sun, Y., & van der Ven, H. (2020). Swimming in their own direction: Explaining domestic variation in homegrown sustainability governance for aquaculture in Asia. Ecological Economics, 167. https://doi.org/10.1016/j.ecolecon.2019.106445

Sunstein, C. R., & Reisch, L. A. (2014). Automatically green: Behavioral economics and environmental protection. Harvard Environmental Law Review, 38(1), 127–158.

Tait, P., Saunders, C., Dalziel, P., Rutherford, P., Driver, T., & Guenther, M. (2019). Estimating wine consumer preferences for sustainability attributes: A discrete choice experiment of Californian Sauvignon blanc purchasers. Journal of Cleaner Production, 233, 412–420. https://doi.org/10.1016/j.jclepro.2019.06.076

Tanner, C., & Wölfing Kast, S. (2003). Promoting sustainable consumption: Determinants of green purchases by Swiss consumers. Psychology & Marketing, 20(10), 883–902. https://doi.org/10.1002/mar.10101

Taufik, D., Bolderdijk, J. W., & Steg, L. (2015). Acting green elicits a literal warm glow. Nature Climate Change, 5(1), 37–40. https://doi.org/10.1038/nclimate2449

Taufique, K. M. R., Nielsen, K. S., Dietz, T., Shwom, R., Stern, P. C., & Vandenbergh, M. P. (2022). Revisiting the promise of carbon labelling. Nature Climate Change 12, 132–140. https://doi.org/10.1038/s41558-021-01271-8

Tepe, J., Benali, M., & Lemken, D. (2021). Consumer demand for novel fruit and vegetable products with extended shelf lives in East Africa: A multinational multi-product analysis. Public Health Nutrition, 1–11. https://doi.org/10.1017/S136898002100478X

Teyssier, S., Etilé, F., & Combris, P. (2015). Social- and self-image concerns in fair-trade consumption. European Review of Agricultural Economics, 42(4), 579–606. https://doi.org/10.1093/erae/jbu036

Thaler, R. H., & Shefrin, H. M. (1981). The Economic Theory of Self-Control. The Journal of Political Economy, 89(2), 392–406. https://doi.org/10.1086/260971

Thøgersen, J., & Olander, F. (2006). The Dynamic Interaction of Personal Norms and Environment-Friendly Buying Behavior: A Panel Study1. Journal of Applied Social Psychology, 36(7), 1758–1780. https://doi.org/10.1111/j.0021-9029.2006.00080.x

Thøgersen, J., Barcellos, M. D. d., Perin, M. G., & Zhou, Y. (2015). Consumer buying motives and attitudes towards organic food in two emerging markets. International Marketing Review, 32(3/4), 389–413. https://doi.org/10.1108/IMR-06-2013-0123

Tonin, M., & Vlassopoulos, M. (2010). Disentangling the sources of pro-socially motivated effort: A field experiment. Journal of Public Economics, 94(11-12), 1086–1092. https://doi.org/10.1016/j.jpubeco.2010.08.011

Torma, G., Aschemann-Witzel, J., & Thøgersen, J. (2018). I nudge myself: Exploring 'self-nudging' strategies to drive sustainable consumption behaviour. International Journal of Consumer Studies, 42(1), 141–154. https://doi.org/10.1111/ijcs.12404

TransFair (2021). Fairtrade - Eine Agenda für die Zukunft Jahres- und Wirkungsbericht 2020/2021. Retrieved from https://www.fairtrade-deutschland.de/fileadmin/DE/mediathek/pdf/transfair_jahresbericht_2021.pdf (last accessed 13 March 2022)

Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. Psychological Review, 117(2), 440–463. https://doi.org/10.1037/a0018963

Trudel, R. (2018). Sustainable consumer behavior. Consumer Psychology Review 2(1), 85–96. https://doi.org/10.1002/arcp.1045

Tung, S.-J., Shih, C.-C., Wei, S., & Chen, Y.-H. (2012). Attitudinal inconsistency toward organic food in relation to purchasing intention and behavior. British Food Journal, 114(7), 997–1015. https://doi.org/10.1108/00070701211241581

Turaga, R. M. R., Howarth, R. B., & Borsuk, M. E. (2010). Pro-environmental behavior - Rational choice meets moral motivation, Annals of the New York Academy of Sciences, 1185(1), 211–223. https://doi.org/10.1111/j.1749-6632.2009.05163.x

Ubilava, D., Foster, K. A., Lusk, J. L., & Nilsson, T. (2010). Effects of income and social awareness on consumer WTP for social product attributes. Technological Forecasting and Social Change, 77(4), 587–593. https://doi.org/10.1016/j.techfore.2009.02.002

UNCTAD (2021). Better Trade for Sustainable Development: The role of voluntary sustainability standards. Retrieved from https://unctad.org/system/files/official-document/ditctab2021d2_en.pdf (last accessed 13 March 2022)

UN Department for Economic and Social Affairs (2021). International Trade Statistics Yearbook 2019, Volume II: trade by product. United Nations. Retrieved from https://www.un-ilibrary.org/content/books/9789210054799 (last accessed on 13 March 2022)

United Nations Forum on Sustainability Standards (2013). Voluntary Sustainability Standards. Today's Landscape of Issues & Initiatives to Achieve Public Policy Objectives. Retrieved from https://unfss.org/wp-content/uploads/2012/05/unfss-report-issues-1_draft_lores.pdf (last accessed 13 March 2022)

Van der Linden, S. (2018). Warm glow is associated with low- but not high-cost sustainable behaviour. Nature Sustainability, 1(1), 28–30. https://doi.org/10.1038/s41893-017-0001-0

Van der Ven, H. (2019). Beyond Greenwash? Explaining Credibility in Transnational Eco-labeling. New York: Oxford University Press.

Van der Wal, S. (2008). Sustainability Issues in the Tea Sector: A Comparative Analysis of Six Leading Producing Countries. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1660434 (last accessed on 13 March 2022)

Van der Werff, E., Steg, L., & Keizer, K. (2013). The value of environmental self-identity: The relationship between biospheric values, environmental self-identity and environmental preferences, intentions and behaviour. Journal of Environmental Psychology, 34, 55–63. https://doi.org/10.1016/j.jenvp.2012.12.006

Van der Werff, E., Steg, L., & Keizer, K. (2014). I Am What I Am, by Looking Past the Present. Environment and Behavior, 46(5), 626–657. https://doi.org/10.1177/0013916512475209

Van Loo, E. J., Caputo, V., Nayga, R. M., Seo, H.-S., Zhang, B., & Verbeke, W. (2015). Sustainability labels on coffee: Consumer preferences, willingness-to-pay and visual attention to attributes. Ecological Economics, 118, 215–225. https://doi.org/10.1016/j.ecolecon.2015.07.011

Van Loo, E. J., Grebitus, C., & Verbeke, W. (2021). Effects of nutrition and sustainability claims on attention and choice: An eye-tracking study in the context of a choice experiment using granola bar concepts. Food Quality and Preference, 90, 104100. https://doi.org/10.1016/j.foodqual.2020.104100

Varul, M. Z. (2009). Ethical selving in cultural contexts: fairtrade consumption as an everyday ethical practice in the UK and Germany. International Journal of Consumer Studies, 33(2), 183–189. https://doi.org/10.1111/j.1470-6431.2009.00762.x

Vecchio, R., & Annunziata, A. (2015). Willingness-to-pay for sustainability-labelled chocolate: an experimental auction approach. Journal of Cleaner Production, 86, 335–342. https://doi.org/10.1016/j.jclepro.2014.08.006

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

Vigors, B. (2018). Reducing the Consumer Attitude-Behaviour Gap in Animal Welfare: The Potential Role of 'Nudges'. Animals, 8(12). https://doi.org/10.3390/ani8120232

Vogel, D. (2010). The Private Regulation of Global Corporate Conduct. Business & Society, 49(1), 68–87. https://doi.org/10.1177/0007650309343407

Voon, J. P., Ngui, K. S., & Agrawal, A. (2011). Determinants of willingness to purchase organic food: an exploratory study using structural equation modeling. International Food and Agribusiness Management Review, 14(2), 103–120. https://ssrn.com/abstract=1875186

Voora, V., Bermudez, S., & Larrea, C. (2019a). Global Market Report: Cocoa. Sustainable Commodities Marketplace Series 2019, IISD. Retrieved from https://www.iisd.org/publications/global-market-report-cocoa (last accessed 13 March 2022)

Voora, V., Bermudez, S., & Larrea, C. (2019b). Global Market Report: Tea. Sustainable Commodities Marketplace Series 2019, IISD. Retrieved from https://www.iisd.org/publications/global-market-report-tea (last accessed 13 March 2022)

Waldman, K. B., & Kerr, J. M. (2018). Does safety information influence consumers' preferences for controversial food products? Food Quality and Preference, 64, 56–65. https://doi.org/10.1016/j.foodqual.2017.10.013

Wang, B., Wang, X., Guo, D., Zhang, B. , & Wang, Z. (2018). Analysis of factors influencing residents' habitual energy-saving behaviour based on NAM and TPB models: Egoism or altruism? Energy Policy, 116, 68–77. https://doi.org/10.1016/j.enpol.2018.01.055

WBAE (2020). Politik für eine nachhaltigere Ernährung. Eine integrierte Ernährungspolitik entwickeln und faire Ernährungsumgebungen gestalten. Gutachten, Berlin. Retrieved from https://www.bmel.de/SharedDocs/Downloads/DE/_Ministerium/Beiraete/agrarpolitik/wbae-gutachten-nachhaltige-ernaehrung.html (last accessed 13 March 2022)

Weingart, P., & Joubert, M. (2019). The conflation of motives of science communication — causes, consequences, remedies. Journal of Science Communication, 18(03). https://doi.org/10.22323/2.18030401

Weinrich, R., & Spiller, A. (2016). Developing food labelling strategies: Multi-level labelling. Journal of Cleaner Production, 137, 1138–1148. https://doi.org/10.1016/j.jclepro.2016.07.156

Welsch, H., Binder, M., & Blankenberg, A.-K. (2021). Green behavior, green self-image, and subjective well-being: Separating affective and cognitive relationships. Ecological Economics, 179, 106854. https://doi.org/10.1016/j.ecolecon.2020.106854

West, P. C., Gerber, J. S., Engstrom, P. M., Mueller, N. D., Brauman, K. A., Carlson, K. M., . . . Siebert, S. (2014). Leverage points for improving global food security and the environment. Science, 345(6194), 325–328. https://doi.org/10.1126/science.1246067

Whillans, A. V., Caruso, E. M., & Dunn, E. W. (2017). Both selfishness and selflessness start with the self: How wealth shapes responses to charitable appeals. Journal of Experimental Social Psychology, 70, 242–250. https://doi.org/10.1016/j.jesp.2016.11.009

White, K., Habib, R., & Hardisty, D. J. (2019). How to SHIFT Consumer Behaviors to be More Sustainable: A Literature Review and Guiding Framework. Journal of Marketing, 83(3), 22–49. https://doi.org/10.1177/0022242919825649

Willer, H., & Lernoud, J. (2018). The world of organic agriculture: statistics & emerging trends 2018. Frick: Forschungsinstitut für biologischen Landbau FIBL. Retrieved from https://www.fibl.org/de/shop/1076-organic-world-2018 (last accessed 13 March 2022)

Willer, H., Travnicek, J., Meier, C., & Schlatter, B. (Eds.) (2021). The world of organic agriculture. Statistics and emerging trends 2021. Research Institute of Organic Agriculture FiBL, Frick, and IFOAM - Organics International, Bonn. Retrieved from https://www.fibl.org/fileadmin/documents/shop/1150-organic-world-2021.pdf (last accessed 13 March 2022)

Wilson, J. P. (2015). The triple bottom line. International Journal of Retail & Distribution Management, 43(4/5), 432–447. https://doi.org/10.1108/IJRDM-11-2013-0210

Wright, S. J. (2010). The future of tropical forests. Annals of the New York Academy of Sciences, 1195, 1–27. https://doi.org/10.1111/j.1749-6632.2010.05455.x

Xie, S., Feng, H., Yang, F., Zhao, Z., Hu, X., Wei, C., . . . Geng, Y. (2019). Does dual reduction in chemical fertilizer and pesticides improve nutrient loss and tea yield and quality? A pilot study in a green tea garden in Shaoxing, Zhejiang Province, China. Environmental Science and Pollution Research International, 26(3), 2464–2476. https://doi.org/10.1007/s11356-018-3732-1

Xu, T., Yu, X., & Holst, R. Applying the payment card approach to estimate the WTP for green food in China, IAMO Forum 2011, Halle (Saale). Retrieved from https://www.econstor.eu/bitstream/10419/50786/1/670816833.pdf (last accessed 13 March 2022)

Xuan, B. B. (2021). Consumer preference for eco-labelled aquaculture products in Vietnam. Aquaculture, 532, 736111. https://doi.org/10.1016/j.aquaculture.2020.736111

Yan, Y. (2012). Food Safety and Social Risk in Contemporary China. The Journal of Asian Studies, 71(3), 705–729. https://doi.org/10.1017/S0021911812000678

Yang, S.-H., Qing, P., Hu, W., & Liu, Y. (2014). Product information and Chinese consumers' willingness-to-pay for fair trade coffee. China Agricultural Economic Review, 6(2), 278–294. https://doi.org/10.1108/CAER-01-2013-0017

Yang, X., Chen, Q. , Lin, N., Han, M., Chen, Q., Zheng, Q., . . . Xu, Z. (2021). Chinese consumer preferences for organic labels on Oolong tea: evidence from a choice experiment. International Food and Agribusiness Management Review, 24(3), 545–561. https://doi.org/10.22434/IFAMR2020.0113

Yin, S., Wu, L., Du, L., & Chen, M. (2010). Consumers' purchase intention of organic food in China. Journal of the Science of Food and Agriculture, 90(8), 1361–1367. https://doi.org/10.1002/jsfa.3936

Yokessa, M., & Marette, S. (2019). A Review of Eco-labels and their Economic Impact. International Review of Environmental and Resource Economics, 13(1-2), 119–163. https://doi.org/10.1561/101.00000107

Zhang, L., Xu, Y., Oosterveer, P., & Mol, A. P. (2016). Consumer trust in different food provisioning schemes: evidence from Beijing, China. Journal of Cleaner Production, 134, 269–279. https://doi.org/10.1016/j.jclepro.2015.09.078

SUPPLEMENTARY MATERIAL

Table S1. Results of principal component analyses of Schwartz Human Values

"Universalism"	**China**		**U.K.**		
Cronbach's alpha: .6877	Mean	SD	Mean	SD	Factor loading
S/he thinks it is important that every person in the world should be treated equally. S/he believes everyone should have equal opportunities in life.	5.80	1.07	5.73	1.44	.8122
It is important to him/her to listen to people who are different from him/her. Even when s/he disagrees with them, s/he still wants to understand them.	5.53	1.13	5.34	1.30	.7664
S/he strongly believes that people should care for nature. Looking after the environment is important to him/her.	5.86	1.07	5.61	1.32	.7743
"Benevolence"	**China**		**U.K.**		
Cronbach's alpha: .4661	Mean	SD	Mean	SD	Factor loading
It's very important to her/him to help the people around her/him. S/he wants to care for their well-being.	5.64	1.13	5.55	1.28	.8076
It is important to her/him to be loyal to her/his friends. S/he wants to devote himself to people close to her/him.	5.86	1.02	5.66	1.23	.8076
"Self-Direction"	**China**		**U.K.**		
Cronbach's alpha: .4940	Mean	SD	Mean	SD	Factor loading
Thinking up new ideas and being creative is important to her/him. S/he likes to do things in her/his own original way.	5.23	1.34	4.78	1.56	.8175
It is important to her/him to make his/her own decisions about what s/he does. S/he likes to be free and not depend on others.	5.75	1.10	5.70	1.23	.8175
"Power"	**China**		**U.K.**		
Cronbach's alpha: .7751	Mean	SD	Mean	SD	Factor loading
It is important to her/him to be rich. S/he wants to have a lot of money and expensive things.	5.35	1.22	3.01	1.69	.9066
It is important to her/him to get respect from others. S/he wants people to do what s/he says.	5.30	1.23	4.02	1.59	.9066
"Achievement"	**China**		**U.K.**		

Cronbach's alpha: .8120	Mean	SD	Mean	SD	Factor loading
It's important to her/him to show her/his abilities. S/he wants people to admire what s/he does.	5.45	1.15	4.09	1.70	.9179
Being very successful is important to her/him. S/he hopes people will recognise her/his achievements.	5.45	1.17	3.81	1.78	.9179
"Security"	**China**		**U.K.**		
Cronbach's alpha: .6417	Mean	SD	Mean	SD	Factor loading
It is important to her/him to live in secure surroundings. S/he avoids anything that might endanger her/his safety.	5.71	1.14	5.32	1.45	.8580
It is important to her/him that the government ensures her/his safety against all threats. S/he wants the state to be strong so it can defend its citizens.	5.90	1.10	5.29	1.40	.8580
"Stimulation"	**China**		**U.K.**		
Cronbach's alpha: .7182	Mean	SD	Mean	SD	Factor loading
S/he likes surprises and is always looking for new things to do. S/he thinks it is important to do lots of different things in life.	5.25	1.33	4.54	1.64	.8843
S/he looks for adventures and likes to take risks. S/he wants to have an exciting life.	4.67	1.63	3.84	1.71	.8843
"Conformity"	**China**		**U.K.**		
Cronbach's alpha: .7287	Mean	SD	Mean	SD	Factor loading
S/he believes that people should do what they're told. S/he thinks people should follow rules at all times, even when no-one is watching.	5.92	1.04	3.97	1.73	.8902
It is important to her/him always to behave properly. S/he wants to avoid doing anything people would say is wrong.	5.71	1.08	4.80	1.55	.8902
"Tradition"	**China**		**U.K.**		
Cronbach's alpha: .4183	Mean	SD	Mean	SD	Factor loading
It is important to her/him to be humble and modest. S/he tries not to draw attention to her/himself.	5.41	1.36	5.14	1.47	.7959
Tradition is important to her/him. S/he tries to follow the customs handed down by her/his religion or her/his family.	5.18	1.35	4.46	1.80	.7959
"Hedonism"	**China**		**U.K.**		
Cronbach's alpha: .4744	Mean	SD	Mean	SD	Factor loading

Having a good time is important to her/him. S/he likes to "spoil" her/himself.	5.28	1.36	4.06	1.64	.8097
S/he seeks every chance s/he can to have fun. It is important to her/him to do things that give her/him pleasure.	5.82	1.07	4.43	1.67	.8097

Note. Scale from 1 'not like me at all ' to 7 'very much like me'. Note 2. Kaiser-Meyer-Olkin measure of sampling adequacy: 0.6629 (universalism) 0.500 (other values)

Table S2. Results of principal component analysis of concerns regarding the food sector

How concerned are you with the following sustainability issues in the food sector?					
	China		**U.K.**		
Cronbach's alpha: .8870	Mean	SD	Mean	SD	Factor loading
The use of child labour in food production.	5.19	1.65	5.91	1.39	.6913
Destruction of natural forests to create land for food production.	5.25	1.35	5.88	1.38	.7805
The use of chemical pesticides and fertilizers used in food production.	5.41	1.34	5.44	1.48	.7883
Environmental damage caused by human use of land and water for food production	5.93	1.19	5.53	1.47	.7797
Using too much of the world's natural resources for food production.	5.73	1.23	5.34	1.51	.8263
Poor working conditions and wages for food producers.	5.41	1.32	5.49	1.37	.7714
Carbon emissions caused by food production.	5.84	1.21	5.10	1.59	.7802

Note. Scale from 1 'only slightly concerned ' to 7 'extremely concerned'. Note 2. Kaiser-Meyer-Olkin measure of sampling adequacy: 0.8795

Table S3. Results of principal component analysis of warm glow statements

Results of principal component analysis of warm glow statements					
	China		**U.K.**		
Cronbach's alpha: .9026	Mean	SD	Mean	SD	Factor loading
Doing something about fair working condition for farm workers gives me a pleasant feeling of personal satisfaction.	5.67	1.10	4.78	1.57	.8546
Reducing my own negative impact on the environment, I feel happy contributing to human well-being and the quality of the natural environment.	5.59	1.14	5.26	1.43	.7977
Doing my part to maintain biodiversity gives me a pleasant feeling of personal satisfaction.	5.64	1.08	4.80	1.49	.8640
I am happy with myself whenever I make a contribution towards protecting the environment.	5.80	1.10	5.27	1.39	.8254
Doing something about social injustice gives me a pleasant feeling of personal satisfaction.	5.51	1.14	4.97	1.51	.8217
Participating in programs aiming at fair compensation for farmers/workers, makes me feel satisfied, giving something back to society.	5.75	1.09	4.69	1.52	.8402

Note. Scale from 1 'not true of me at all ' to 7 'extremely true of me'. Note 2. Kaiser-Meyer-Olkin measure of sampling adequacy: .9124

Table S4

OLS regression results for China dataset; Dependent Variable: Individual part worth utilities by attribute level

	Environmental VSS			Social VSS			Food Safety VSS			Price		
VARIABLES	HIGH	MED	LOW	HIGH	MED	LOW	HIGH	MED	LOW	HIGH	MED	LOW
Gender (0=female)	-0.0468	0.472	-0.425	1.075	-1.269	0.194	10.29***	-4.161**	-6.131**	12.68*	-3.406*	-9.275
	(2.062)	(1.502)	(2.019)	(2.445)	(1.770)	(1.805)	(3.870)	(1.991)	(2.897)	(6.769)	(1.793)	(7.224)
Age groups	1.373	1.198	-2.571**	1.274	-1.734	0.460	1.487	-1.319	-0.168	-5.465	0.174	5.292
	(1.259)	(1.029)	(1.256)	(1.486)	(1.091)	(1.112)	(2.332)	(1.325)	(1.730)	(4.062)	(1.065)	(4.208)
Level of education	-0.606	-0.0990	0.705	1.004	-3.720***	2.716**	0.343	-0.0535	-0.290	5.026	4.372***	-9.398*
	(1.513)	(1.179)	(1.470)	(1.856)	(1.303)	(1.316)	(2.913)	(1.550)	(2.100)	(4.635)	(1.301)	(5.003)
Level of income	2.682**	0.467	-3.149***	0.928	-0.101	-0.827	3.274	-0.298	-2.976*	13.06***	0.522	-13.58***
	(1.204)	(0.881)	(1.181)	(1.487)	(1.102)	(1.069)	(2.240)	(1.161)	(1.651)	(3.904)	(1.194)	(4.227)
Universalism	0.898	-0.792	-0.106	-0.330	-0.625	0.955	2.725	-0.612	-2.114	0.406	-1.964	1.558
	(1.779)	(1.442)	(1.884)	(2.128)	(1.564)	(1.574)	(3.165)	(1.918)	(2.332)	(5.699)	(1.611)	(6.069)
Benevolence	1.235	0.397	-1.632	1.294	0.309	-1.604	0.0516	-0.792	0.741	10.87**	-1.299	-9.567*
	(1.276)	(1.070)	(1.336)	(1.632)	(1.303)	(1.285)	(2.397)	(1.321)	(1.806)	(4.535)	(1.308)	(4.917)
Self-direction	2.651*	-1.664	-0.986	1.744	1.550	-3.294**	0.175	1.213	-1.388	-0.995	-2.989*	3.984
	(1.448)	(1.018)	(1.473)	(1.726)	(1.250)	(1.314)	(2.512)	(1.351)	(1.888)	(4.369)	(1.564)	(4.785)
Power	0.852	-1.897	1.045	-0.825	0.581	0.244	1.968	0.472	-2.439	-1.679	-1.474	3.153
	(1.760)	(1.174)	(1.733)	(1.976)	(1.463)	(1.413)	(3.023)	(1.531)	(2.237)	(5.900)	(1.487)	(6.307)
Achievement	-2.880	1.207	1.673	1.373	-1.329	-0.0438	-8.055**	1.060	6.995***	1.710	-0.0218	-1.688
	(2.082)	(1.545)	(2.048)	(2.487)	(2.009)	(1.889)	(3.608)	(1.965)	(2.666)	(6.610)	(1.796)	(7.060)
Security	-4.617***	4.005***	0.611	-3.002	0.635	2.367	10.26***	-4.920**	-5.339**	-9.101*	2.636*	6.465
	(1.700)	(1.384)	(1.622)	(1.965)	(1.467)	(1.448)	(3.063)	(2.016)	(2.123)	(4.888)	(1.534)	(5.270)
Stimulation	-0.820	1.527	-0.707	3.688**	-2.123	-1.565	-5.228*	1.446	3.782**	16.92***	-0.288	-16.63***
	(1.376)	(1.170)	(1.523)	(1.755)	(1.381)	(1.372)	(2.697)	(1.453)	(1.924)	(4.595)	(1.288)	(4.922)
Conformity	1.885	-0.272	-1.613	-0.424	2.070	-1.646	6.835*	-0.0243	-6.810**	2.351	1.321	-3.672
	(2.633)	(1.995)	(2.138)	(2.685)	(2.152)	(2.055)	(3.680)	(2.087)	(2.753)	(7.001)	(1.826)	(7.256)
Tradition	-1.647	-2.546***	4.193***	-1.682	0.131	1.551	-11.12***	4.422***	6.696***	-5.762	-0.577	6.339
	(1.125)	(0.908)	(1.169)	(1.421)	(0.997)	(1.030)	(2.139)	(1.199)	(1.556)	(3.741)	(1.064)	(4.004)
Hedonism	1.913	-0.148	-1.764	0.939	-0.988	0.0499	2.409	-1.486	-0.923	10.22**	1.608	-11.83**
	(1.673)	(1.267)	(1.706)	(2.021)	(1.407)	(1.526)	(2.975)	(1.602)	(2.211)	(5.184)	(1.378)	(5.539)
Concerns factor	2.362**	-1.044	-1.318	-0.506	1.108	-0.601	0.456	-0.0538	-0.402	7.133	-2.221*	-4.913
	(1.181)	(0.870)	(1.183)	(1.579)	(1.074)	(1.111)	(2.021)	(1.084)	(1.663)	(5.202)	(1.233)	(5.088)
Warm Glow factor	1.693	0.0175	-1.711	4.422*	-5.588***	1.166	-1.049	-0.508	1.557	13.66*	6.131***	-19.79**
	(2.224)	(1.724)	(2.290)	(2.681)	(2.002)	(2.064)	(4.198)	(2.233)	(3.186)	(7.831)	(1.931)	(8.234)
Constant	21.48**	-11.43*	-10.05	7.355	12.66*	-20.01***	28.90**	-14.75*	-14.14	-90.62***	4.275	86.34***
	(8.519)	(6.511)	(7.863)	(9.516)	(6.750)	(7.039)	(14.24)	(7.857)	(10.68)	(25.49)	(6.957)	(26.87)
Observations	918	918	918	918	918	918	918	918	918	918	918	918
R-squared	0.041	0.028	0.041	0.040	0.041	0.028	0.067	0.038	0.053	0.156	0.049	0.151

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table S5

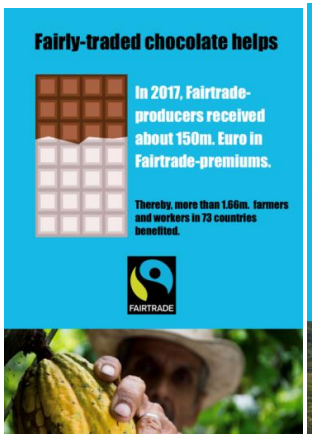
OLS regression results for UK dataset; Dependent Variable: Individual part worth utilities by highest attribute level

	Environmental VSS			Social VSS			Food Safety VSS			Price		
VARIABLES	HIGH	MED	LOW	HIGH	MED	LOW	HIGH	MED	LOW	HIGH	MED	LOW
Gender (0=female)	-3.347	-0.830	4.178*	-3.757**	-0.815	4.571**	-2.932	2.840*	0.0921	-12.59*	-1.363	13.96*
	(2.202)	(1.361)	(2.264)	(1.743)	(1.215)	(2.238)	(3.309)	(1.680)	(2.814)	(7.250)	(2.385)	(7.719)
Age groups	-2.386*	-0.855	3.241**	-1.581	-1.371*	2.952**	-0.274	-1.510	1.784	-12.09***	3.386**	8.703*
	(1.306)	(0.797)	(1.382)	(0.997)	(0.719)	(1.248)	(1.806)	(0.972)	(1.514)	(4.257)	(1.330)	(4.449)
Level of education	-1.208	-0.478	1.686*	-1.578**	-0.294	1.873*	-1.487	1.446*	0.0412	-2.546	-0.0328	2.579
	(0.978)	(0.584)	(0.975)	(0.761)	(0.533)	(0.959)	(1.517)	(0.839)	(1.248)	(2.995)	(0.961)	(3.240)
Level of income	1.258	-0.0251	-1.233	1.710*	0.207	-1.917	0.591	-0.626	0.0351	4.755	0.834	-5.589
	(1.232)	(0.780)	(1.292)	(0.981)	(0.641)	(1.166)	(1.822)	(0.961)	(1.548)	(3.914)	(1.253)	(4.168)
Universalism	1.943	-1.556*	-0.387	1.874*	0.435	-2.309	-0.573	1.590	-1.016	3.907	-0.343	-3.564
	(1.545)	(0.879)	(1.505)	(1.116)	(0.783)	(1.422)	(2.176)	(1.144)	(1.821)	(4.895)	(1.459)	(5.205)
Benevolence	-0.0355	-0.141	0.176	-1.419	-1.502**	2.921**	-1.758	1.428	0.330	0.925	-1.464	0.539
	(1.227)	(0.789)	(1.270)	(0.951)	(0.650)	(1.227)	(2.003)	(1.050)	(1.585)	(4.192)	(1.445)	(4.467)
Self-direction	-1.670	-0.0640	1.734	-0.600	-0.674	1.274	2.580	-0.555	-2.026	-0.251	-0.892	1.143
	(1.236)	(0.760)	(1.236)	(0.953)	(0.630)	(1.241)	(1.703)	(0.872)	(1.427)	(3.828)	(1.253)	(4.151)
Power	1.225	-0.570	-0.655	1.758	0.489	-2.246	3.736	0.649	-4.384**	12.97**	-0.489	-12.48**
	(1.756)	(1.049)	(1.781)	(1.369)	(0.940)	(1.795)	(2.538)	(1.340)	(2.108)	(5.892)	(1.736)	(6.162)
Achievement	-1.598	0.0914	1.506	0.360	-0.681	0.321	-3.155	0.307	2.848	-13.40**	1.774	11.63**
	(1.666)	(0.855)	(1.651)	(1.169)	(0.825)	(1.556)	(2.369)	(1.201)	(1.969)	(5.456)	(1.645)	(5.699)
Security	-0.979	-0.407	1.385	-0.561	-0.520	1.081	1.290	-1.048	-0.242	-3.986	0.278	3.707
	(1.180)	(0.706)	(1.166)	(0.960)	(0.700)	(1.271)	(1.853)	(0.999)	(1.496)	(4.002)	(1.321)	(4.174)
Stimulation	1.933	0.318	-2.252*	1.351	1.538**	-2.888**	4.311**	-2.121**	-2.190	8.595**	-0.603	-7.992*
	(1.251)	(0.819)	(1.343)	(0.977)	(0.671)	(1.220)	(1.906)	(0.986)	(1.642)	(4.072)	(1.403)	(4.356)
Conformity	-0.796	1.064	-0.268	-0.962	0.0693	0.892	-0.606	0.526	0.0800	-0.264	-0.780	1.044
	(1.353)	(0.869)	(1.396)	(1.115)	(0.755)	(1.366)	(2.093)	(1.106)	(1.682)	(4.470)	(1.506)	(4.721)
Tradition	0.997	0.0930	-1.090	1.615*	-0.352	-1.264	1.038	-1.874*	0.837	1.412	-0.0619	-1.350
	(1.277)	(0.749)	(1.332)	(0.960)	(0.667)	(1.244)	(1.820)	(0.961)	(1.563)	(4.081)	(1.344)	(4.323)
Hedonism	-0.267	-1.042	1.309	-0.251	-0.629	0.880	-1.480	2.136**	-0.656	-3.466	-0.243	3.708
	(1.234)	(0.771)	(1.306)	(1.024)	(0.686)	(1.284)	(1.904)	(1.008)	(1.517)	(3.967)	(1.366)	(4.228)
Concerns factor	3.474***	1.702**	-5.176***	2.342**	1.593**	-3.935***	7.376***	-0.997	-6.379***	19.86***	0.405	-20.27***
	(1.298)	(0.801)	(1.329)	(1.031)	(0.663)	(1.254)	(1.960)	(1.040)	(1.596)	(3.952)	(1.372)	(4.428)
Warm Glow factor	3.301**	0.394	-3.695***	1.055	0.718	-1.773	0.0288	-0.483	0.454	6.506	1.311	-7.817
	(1.422)	(0.877)	(1.369)	(1.222)	(0.736)	(1.505)	(2.236)	(1.205)	(1.732)	(4.702)	(1.486)	(5.039)
Constant	42.46***	16.05***	-58.51***	41.33***	14.09***	-55.42***	67.10***	-25.67***	-41.43***	-59.00***	31.60***	27.40
	(6.042)	(3.620)	(6.449)	(4.806)	(3.440)	(6.155)	(8.718)	(4.429)	(7.275)	(19.45)	(6.070)	(20.72)
Observations	905	905	905	905	905	905	905	905	905	905	905	905
R-squared	0.081	0.016	0.094	0.065	0.038	0.079	0.049	0.032	0.052	0.114	0.013	0.099

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

S1. Treatments: Informative and affective appeals

	Original in German	English Translation
Affective Appeals		
		
		
Informative appeals		
		
		

S2. Examples of auction screen

€ 0,00

Gebot abgeben

€ 1,00

Gebot abgeben

S3. Geographic distribution of sample (in %) compared to census data

	Sample	Census
State		
Baden-Wuerttemberg	13	13
Bavaria	12	16
Berlin	9	4
Brandenburg	4	3
Bremen	2	1
Hamburg	4	2
Hesse	6	8
Mecklenburg-Western Pomerania	2	2
Lower Saxony	5	10
North Rhine-Westphalian	21	22
Rhineland-Palatinate	5	5
Saarland	2	1
Saxony	7	5
Saxony-Anhalt	3	3
Schleswig-Holstein	3	3
Thuringia	2	3
Size of residence (in inhabitants)		
less than 5,000	16	14
5,000 - > 20,000	17	26
20,000 - > 100,000	26	27
100,000 - > 200,000	10	7
200,000 - > 500,000	10	9
500,000 and more	21	17

S4. Description and analysis of quiz prior to the BDM

Procedure:

First of all, participants received detailed instructions about the mechanism of the BDM. In order to check whether they understood the mechanism, participants had to answer five questions (see below for translated instructions and questions). If answered correctly, participants proceeded to the next question. If answered incorrectly, participants were informed that their answer was wrong and they had to answer the question again. If their answer was still wrong, participants were given the correct answer. Besides explaining the mechanism, the instructions highlighted the binding nature of the BDM, which was also highlighted on the landing page of the survey. There participants had to agree that they were willing to participate in a binding auction. Participants had to indicated their willingness to participate in a binding auction prior to each auction, i.e. before they received each new auction screen (S2). After placing their bid, participants received an information whether their bid was higher than the already deposited bid or not, but not whether this auction was binding or not.

Instruction:

Original (German)	Translation (English)
Lesen Sie sich die Informationen zur Auktion bitte gründlich durch. Im Anschluss folgt ein kleines Quiz, so dass wir wissen, dass Sie sich über den Ablauf bewusst sind. Schritt 1: Sie sehen ein Produkt und Informationen über dieses Produkt. Schritt 2: Sie können ein Gebot für dieses Produkt abgeben. Wieviel sind Sie bereit zu zahlen, um dieses Produkt zu kaufen? (Erinnerung: Es entstehen Ihnen keinerlei Versandkosten!) Schritt 3: Die Plattform vergleicht Ihr Gebot mit einem bereits hinterlegten Gebot. Schritt 4a: Ist Ihr Gebot höher als das hinterlegte Gebot, kommt ein Kauf zustande, ABER für den Preis des hinterlegten Gebots. Schritt 4b: Ist Ihr Gebot geringer als das hinterlegte Gebot, kommt kein Kauf zustande. Dieser Ablauf wird 5 Mal wiederholt. Von diesen 5 Runden werden 2 zufällig ausgewählt, die verbindlich sind. So könnten Sie am Ende der Auktion maximal 2 Produkte erstehen. Im Anschluss erhalten Sie eine E-Mail von veylinx mit Informationen zur Bezahlung. Innerhalb einer Woche nach Zahlungseingang erhalten Sie das Produkt/die Produkte von uns. Bei Fragen können Sie sich im Anschluss an die Auktion jederzeit an [redacted] wenden. Hinweis: Der Ablauf der Auktion ist so gewählt, dass es in Ihrem besten Interesse ist, den Betrag zu bieten, den Sie auch wirklich bereit wären zu zahlen. Bieten Sie mehr als Sie bereit sind zu zahlen, dann könnte auch das hinterlegte Gebot höher sein als Ihre Zahlungsbereitschaft. Sie würden entsprechend Ihrer Präferenzen zu viel zahlen. Sie hätten ein „schlechtes Geschäft“ gemacht. Bieten Sie weniger als Sie bereit sind zu zahlen, dann könnten Sie die Möglichkeit verpassen, das Produkt für einen Preis zu erhalten, den Sie eigentlich bereit wären zu zahlen. Sie hätten ein „gutes Geschäft“ verpasst. Wenn Sie kein Interesse an dem Produkt haben, dann bieten Sie einfach 0 Euro.	Please read the information about the auction thoroughly. It is followed by a short quiz so that we are assured that you are aware of the process. Step 1: You will see a product and information about this product. Step 2: You can place a bid for this product. How much are you willing to pay to buy this product? (Reminder: there are no shipping costs for you!). Step 3: The platform compares your bid with an already deposited bid. Step 4a: If your bid is higher than the deposited bid, a purchase is made, BUT for the price of the deposited bid. Step 4b: If your bid is lower than the deposited bid, no purchase will be made. ➔ This process is repeated 5 times. Of these 5 rounds, 2 will be randomly selected and will be binding. So, you could buy a maximum of 2 products at the end of the auction. ➔ Afterwards you will receive an email from veylinx with payment information. ➔ Within a week after payment is received, you will receive the product(s) from us. ➔ If you have any questions after the auction, you can always contact us at [redacted] Note: The auction process is such that it is in your best interest to bid the amount you would be willing to pay. If you bid more than you are willing to pay, then the deposited bid could also be higher than your willingness to pay. You would be overpaying according to your preferences. You would have made a "bad deal". If you bid less than you are willing to pay, then you could miss the opportunity to get the product for a price you would actually be willing to pay. You would have missed out on a "good deal." If you are not interested in the product, then just bid 0 euros.

Quiz:

Original (German)	Translation (English)
1. Wie viele Produkte könnten Sie maximal in dieser Auktion ersteigern? a. 2 b. 4 c. 5 2. Welchen Preis müssten Sie zahlen, wenn Ihr Gebot höher ist als das bereits hinterlegte Gebot? a. den Preis in Höhe Ihres Gebots b. den Preis in Höhe des bereits hinterlegten Gebots 3. Sollten Sie die Auktion für sich entscheiden, dann ist der Preis, den Sie zahlen müssen… a. …immer höher als Ihr Gebot b. …immer niedriger als Ihr Gebot (oder gleich hoch) c. …manchmal höher, manchmal niedriger 4. Wie viel müssten Sie für den Versand zahlen? a. 2,50 € b. 0 € c. Der Betrag ist abhängig von der Anzahl der ersteigerten Produkte 5. Die beste Strategie für die Auktionsteilnahme ist: a. So gering wie möglich zu bieten, um das Produkt so günstig wie möglich zu bekommen b. So hoch wie möglich zu bieten, um das Produkt definitiv zu ersteigern c. Den Betrag zu bieten, den man auch tatsächlich bereit ist zu zahlen	1. What is the maximum number of products you could buy in this auction? a. 2 b. 4 c. 5 2. What price would you have to pay if your bid is higher than the already deposited bid? a. the price equal to your bid b. the price equal to the already deposited bid 3. if you win the auction, the price you have to pay is... a. ...always higher than your bid b. ...always lower than your bid (or the same) c. ...sometimes higher, sometimes lower 4. How much would you have to pay for shipping? a. 2,50 € b. 0 € c. The amount depends on the number of auctioned products 5. The best strategy for auction participation is: a. Bid as low as possible to get the product as cheap as possible b. Bid as high as possible to get the product for sure c. To bid the amount you are actually willing to pay

S 5. Descriptive analysis of quiz (in %)

Panel A: Answers		
	Correct	**Wrong**
Question 1	57.1	42.9
Question 2	52.0	47.0
Question 3	60.5	39.5
Question 4	64.7	35.3
Question 5	51.3	48.7
Panel B: Share of incorrect answers per participants		
0 out of 5		15.6
1 out of 5		20.1
2 out of 5		22.7
3 out of 5		21.8
4 out of 5		15.3
5 out of 5		4.4

S6. Bids in Euro by paying and non-paying participants

Panel A:		Bids > pre-determined price, not paid			Bids > pre-determined price, paid		
		Mean	SD	N	Mean	SD	N
Fairtrade							
Chocolate bar	***	3.06	1.27	209	2.38	0.61	42
Tea		3.23	1.05	164	2.93	0.38	14
Rainforest Alliance							
Chocolate bar		2.84	1.35	219	2.41	0.63	19
Tea	**	3.63	1.22	140	3.07	0.72	16

Note. A Kruskal-Wallis H test showed that there is a statistically significant difference in the mean WTP between both groups for the RA tea, p=0.030, and for the FT chocolate, p=0.003.

Panel B:		Bids > 0, not paid			Bids > 0, paid		
		Mean	SD	N	Mean	SD	N
Fairtrade							
Chocolate bar		1.90	1.21	526	2.06	0.78	47
Tea	***	1.23	1.33	498	1.84	0.98	42
Rainforest Alliance							
Chocolate bar	***	1.69	1.34	533	2.06	0.73	44
Tea	**	1.89	1.35	506	2.27	0.89	39

Note. A Kruskal-Wallis H test showed that there is a statistically significant difference in the mean WTP between both groups for three products.

Panel C:		All bids, not paid			All bids, paid		
		Mean	SD	N	Mean	SD	N
Fairtrade							
Chocolate bar	***	1.21	1.40	767	2.27	0.67	47
Tea	***	1.23	1.33	768	1.84	0.98	47
Rainforest Alliance							
Chocolate bar	***	1.17	1.36	768	1.93	0.87	47
Tea	***	1.24	1.42	768	1.89	1.18	47

Note. A Kruskal-Wallis H test showed that there is a statistically significant difference in the mean WTP between both groups for all products.

S7. Bids in Euro by gender

Panel A: All bids (incl. 0 bids)		**Men**		**Women**	
		Mean	**SD**	**Mean**	**SD**
Fairtrade					
Chocolate bar	*	1.37	1.43	1.15	1.31
Tea	***	1.41	1.44	1.12	1.17
Rainforest Alliance					
Chocolate bar	*	1.32	1.41	1.11	1.26
Tea		1.38	1.43	1.19	1.39

Note. A pairwise comparison (gender neutral as a third option, but extremely few observations) show a statistically significant difference in the mean WTP between both groups for the FT tea, p=0.005, for the FT chocolate, p=0.051, and for the RA chocolate, p=0.076.

Panel B: Bids > 0		**Men**		**Women**	
		Mean	**SD**	**Mean**	**SD**
Fairtrade					
Chocolate bar		1.87	1.36	1.70	1.26
Tea	***	2.07	1.29	1.74	1.03
Rainforest Alliance					
Chocolate bar		1.81	1.36	1.61	1.23
Tea		2.01	1.31	1.81	1.34

Note. A pairwise comparison shows a statistically significant difference in the mean WTP between both groups for the FT tea, p=0.004.

SUPPLEMENTARY MATERIAL OF CHAPTER FIVE

Please find all indicated supplementary material of Chapter Five online:

https://www.uni-goettingen.de/de/document/download/222f897476761f20efb2d6838baf9ab2.pdf/SFS_DP_001.pdf

(last accessed on 12 March 2022)

DECLARATIONS

1. I, hereby, declare that this Ph.D. dissertation has not been presented to any other examining body either in its present or a similar form.

   Furthermore, I also affirm that I have not applied for a Ph.D. at any other higher school of education.

   Göttingen,_____

   _____
   (Signature)

   _____
   (Name in Block Capitals)

2. I, hereby, solemnly declare that this dissertation was undertaken independently and without any unauthorized aid.

   Göttingen,_____

   _____
   (Signature)

   _____
   (Name in Block Capitals)