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CONSUMER BEHAVIOUR: CONCEPTUALISATION, SCALE DEVELOPMENT
AND VALIDATION OF AGRO-FOOD CHAIN FAIRNESS

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ABSTRACT

Although there is broad agreement on the need to transition to a fairer agro-food system, consumer potential in shaping a fair food system has often been overlooked. The concept of fairness takes its origin back to antiquity, but only recently it has emerged in the context of agro-food chains. Farmers' dissatisfaction has spread throughout Europe due to low payments and unfair treatment arousing general interest from different parties. Driven by recent events related to producer remuneration, fairness has become a significant topic of interest for academics and businesses, organisations and policymakers. However, the definition of fairness is rather limited in the field of consumer behaviour and its measurement is not always suitable. Most definitions of fair consumption and purchasing behaviour encompass reference to environmental or economic issues, overshadowing other potentially important aspects for consumers.

There is no unique definition of the concept of fairness from the consumer's perspective. In addition, there are no scales in the academic literature that address fairness in its broad sense, as the existing scales focus on specific and limited aspects that provide a partial picture of the concept. Lack of a true and trustworthy measurement of the notion has been a significant barrier to the knowledge of fairness in agro-food systems from the individual-differences perspective. The individual-differences perspective helps explain why some individuals are more likely than others to put emphasis on the extent to which agro-food chains are fair. Individual consumer perception of an ethical problem is followed by the perception of various alternatives that might lead to a solution. Therefore, the current research intends to make two significant contributions by resolving these constraints. First, advance the literature by providing a new viewpoint to understand fairness in the agro-food chain. Indeed, the research provides a comprehensive conceptualisation of fairness that embraces different aspects of fairness and describes the concept in all its facets and nuances. Second, the research provides a valid, reliable, and invariant measurement of the individual disposition toward fairness in agro-food chains by rooting the items in the theoretical underpinnings of the fairness literature. Overall, this research provides a comprehensive suite of approaches and tools to enhance the resilience, integrity and sustainability of agro-food chains.

INTRODUCTION

Background

Concern for the environment, working conditions, fair payments and human rights has increasingly led consumers to turn to sustainable brands and fair products. Consumers can express their feelings of responsibility towards society and their appreciation of socially responsible companies and products through fair purchasing behaviour. For this reason, an increasing number of businesses are aware of the need to consider ecological and human welfare implications when adopting sustainable development principles. As ethical consumption plays an important role in purchasing and consumption habits, understanding the drivers of fair consumption behaviour is essential for marketing researchers. Unsurprisingly, research pertaining to different aspects of fair agro-food chain is also increasing. Only in the last twenty years did research begin to focus more strongly on fairness from a consumer rather than a producer perspective. However, even when ethical research focuses on consumers, it tends to emphasize environmental issues, with fewer studies incorporating wider issues. Environmentally friendly and fairly traded products are the two most typical examples of ethical products.

The subject of fairness is indisputably one of the most important topics in the agro-food sector. In the early 2000s, falling milk prices have seen dairy farmers complain severely of low profits. Farmers' remuneration did not allow them to cover the costs of milk production, leading to a heated debate on the distribution of revenues throughout the chain. Over the years, similar episodes increased all over Europe. This phenomenon has aroused a lot of attention also among policymakers in the European Union (EU), as findings show that the negative impact of unfair trade practices (UTPs) is affecting the food systems. The EU recently published an Unfair Trade Practices Directive (2019/633) aimed at targeting weaker suppliers (mainly farmers), including further downstream organizations (e.g. as agro-food suppliers). For these reasons, the focus has shifted to the dynamics along the food chain and among its actors, while excluding the consumer and his potential to bring about change in the system. For these reasons, this thesis focuses on consumers, providing a major contribution to the literature with a pioneering and innovative approach to studies on these issues.

Objectives

This doctoral dissertation is positioned in the context above described, with the ambition of answering to the need to provide a clear vision of what are the major drivers influencing purchasing behaviour, to define the concept of fairness, especially from the consumer's point of view, and to

provide a tool that measures consumers' interest in ethics and predicts the effects of fairness on consumer behaviour and emotions. The overall objective of this research is to contribute to the development of a more sustainable and fair agro-food system by analysing consumers' behaviour, awareness and attitude towards fairness of food products and along the chain. The following presented studies aimed to:

1. Provide an overview of the major determinants in chocolate consumption by:
 - investigating consumer behaviour towards chocolate purchasing and consumption;
 - identifying what factors influence chocolate purchasing and consumption behaviour;
 - identifying the most widely used methods for studying chocolate consumer behaviour;
 - suggesting possible gaps in the literature and thus providing insights for future research on consumption behaviour.
2. Explore consumers' perception and interest in fairness in the agro-food chain by:
 - defining a comprehensive theoretical framework to conceptualize fairness from a consumer perspective;
 - analysing the consumers' perceived importance of food attributes taking into account various aspects, including fairness, product characteristics and consumer habits.
3. Define a reliable, valid and invariant multidimensional measurement of the individual disposition toward fairness in agro-food chains:
 - by providing a further multidimensional conceptualization that encompasses key attributes of the construct;
 - by showing a solid and detailed methodology for the development and validation of a measurement scale.

Novelties

The research stands out of the current literature for its comprehensive approach with which the concept of fairness and ethics in the agro-food sector is analysed. Moreover, it also presents the development of a multi-country tested instrument on fairness measurement. After a thorough literature review regarding consumers' consumption and purchasing behaviour in the chocolate food chain, results show that there is a strong focus on fair trade. Fair trade is associated with chocolate par excellence as industry dominated by exploitation and unfair practices. The concept of fair trade is not so far from the concept of fairness. They shares many points in common but without fully overlapping. Indeed, the boundaries between fairness, fair trade, and even sustainability, are often blurred and lead to misunderstanding on the part of consumers. In particular, the first novelty

of the current research is the theoretical framework developed to describe the concept of fairness from the specific perspective of consumers. Additionally to most of applied studies where fairness is often analysed exclusively through price distribution and from the farmers' point of view, the research introduces five new and defined dimensions of fairness from the under-examined consumer perspective. The lack of knowledge on consumers' level of understanding and awareness of a broader fairness concept determine the need to understand their interest in order to provide companies with a deeper knowledge about consumers to better encounter their needs.

Although there is a clear lack of literature providing a comprehensive definition of the concept of fairness from the perspective of consumers, the lack of a scale measuring their disposition when purchasing is even more evident. The second major innovation of this research is the instrument that was developed to predict consumers' commitment and emotional experience during consumption and purchasing behaviour of fair products. This specific study is also relatively unique in that it develops and validates the scale using consumers in two diverse nations (UK and Italy). This paper justifies and validates the new scale. It begins by presenting the state of the art about fairness in literature before showing the process of creating and validate a scale. This paper has many contributions and opens interesting perspectives for research on the new consumption trends, particularly in ethical consumption.

Overview

The thesis is a combination of three individual papers, each building a single chapter and contributing to the understanding of consumers' behaviour towards different food attributes with an open eye on fairness and ethics. Overall, the papers will provide the picture needed to represent the key elements in consumers' behaviour, preferences and attitudes towards fairness. The research will also fill the gap in the literature of a clear definition and conceptualisation of fairness. Finally, the added value of this research is to offer a valid and reliable scale able to predict consumers' commitment, willingness to purchase, and emotional experience during purchasing which may potentially be related to a variety of marketing outcomes such as organisation attitudes or behaviour.

The next chapter provides an overview of the major determinants in chocolate consumption as well as main research issues and insights for future research. A strong focus is made on the methodologies used in consumer studies and on fair trade product attribute.

The second chapter will explore consumer perceptions and interest in fairness in the agro-food chain. In particular, it will provide a definition of fairness from a consumer perspective and an analysis of consumers' perceived importance of certain product attributes, including fairness related

characteristics. Through an extensive literature review and online semi-structured interviews with consumers, a three-section questionnaire has been developed. After collecting 529 valid responses, an EFA was applied to identify the main dimensions of fairness and an ANOVA was run to see whether perception and awareness of the concept of fairness influence the perceived importance of certain food attributes.

Given the importance of fairness along the agro-food chain and demonstrating the absence of a valid and reliable measurement of the construct, the third paper provides a validated instrument to measure the individual difference perspective of the concept of fairness. Specifically, we develop and validate a four-dimensional second-order measurement instrument of consumers' disposition towards fairness that can predict consumers' involvement and emotional experience during consumption. By following contemporary stages of scale development, we offer a reliable, valid and invariant measurement across two countries – Italy and the United Kingdom (U.K.). It then justifies the samples and the chosen nations prior to explaining the development and validation of the new measurement instrument. It concludes with an evaluation of the new scale with its predictive validity and discusses its implications for research and practice.

CHAPTER 1

Literature review

Chocolate Consumption and Purchasing Behaviour Review: Research Issues and Insights for Future Research

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Del Prete, M., & Samoggia, A. (2020). Chocolate Consumption and Purchasing Behaviour Review: Research Issues and Insights for Future Research. *Sustainability*, 12(14), 5586. <https://doi.org/10.3390/su12145586>

Abstract: Chocolate is consumed all over the world. Since its origin, it has undergone many transformations to meet changing market demand. A better understanding of consumer behaviour is a key objective of any business, and so it is for chocolate businesses. In order to fulfil this aim, the current study presents a systematic literature review of consumers' consumption and purchasing behaviour towards cocoa and chocolate. Two databases have been used to collect the literature: Scopus and Web of Science. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram was used to identify the articles through the process of data screening and extractions. A total of sixty-four scientific articles have been selected. Research topics, methodological approach and data collection method were identified for each article selected. Then, the identified topics were grouped into four categories in order to obtain a model of major determinants in chocolate consumption: personal preferences, product attributes, socio-demographic factors and economic attributes. Results show that there is a strong focus on Fair Trade in chocolate. Moreover, the current literature review supports the fact that the price and promotion are under-investigated issues. This research represents a valuable tool, especially from a marketing point of view, by creating new channels and new sales opportunities for chocolate products.

Keywords: cocoa; chocolate; consumer behaviour; consumption; purchasing; perceptions; motives; attributes; literature review

1. Introduction

Chocolate is an accessible luxury [1] that we treat ourselves to for personal gratification [2–6]. It has undergone a significant transformation since its origins, going from being a simple drink consumed by indigenous people [7] to a specialty product.

The main ingredient of chocolate is cocoa. Over the last 40 years, there has been a discontinuous but steady growth in cocoa production. Approximately 1.6 million tonnes of cocoa was produced worldwide during the crop year 1980/81. Almost 5 million tonnes of cocoa were produced in the last crop year 2018/19 [8] with 2.5 million tonnes produced on the Ivory Coast [9], which, together with Ghana, covers the demand of 60% of all cocoa used for chocolate production in the world [10].

Chocolate is consumed all over the world, and the largest chocolate manufacturers are based in North America and Europe [11]. Top consumers are the Swiss (8.8 kg/year/per capita), and bottom level consumers are the Chinese (100 g per year/per capita) [12].

Chocolate formulation is in constant evolution. The changes aim to meet the evolving demands of food consumers. There is an increasing request for a low-calorie chocolate without sugar and a vegan product formulation without animal derivatives [13]. However, there is no systematic review of the literature that reports the results of past studies on cocoa and chocolate consumer purchasing and consumption behaviour.

Thus, the purpose of the present literature review is to:

1. Investigate consumer behaviour towards chocolate purchasing and consumption;
2. Identify what factors influence chocolate purchasing and consumption behaviour;
3. Identify the most widely used methods for studying chocolate consumer behaviour;
4. Suggest possible gaps in the literature and thus provide insights for future research on chocolate consumption behaviour.

This literature review provides an overview of the major determinants in chocolate consumption. Understanding consumers' preferences, perceptions and motivations in purchasing behaviours allows us to target a greater number of consumers and thus create new channels and new sales opportunities for chocolate products.

The structure of the paper is as follows. Section 2 provides a description of the search strategy and selection criteria that have been applied to identify the papers for the current literature

review. Section 3 collects the results divided into the four categories identified. Further areas of research and conclusions are presented in Sections 4 and , respectively.

2. Methods

In order to identify, organize and analyse the literature on consumer purchasing and consumption behaviour towards chocolate and cocoa, a systematic review [14] of the studies conducted to date has been carried out. The study followed a structured protocol. Figure 1 outlines the research method and the criteria for selecting relevant articles in the literature. The results of study selection will be presented based on a PRISMA flow diagram [15].

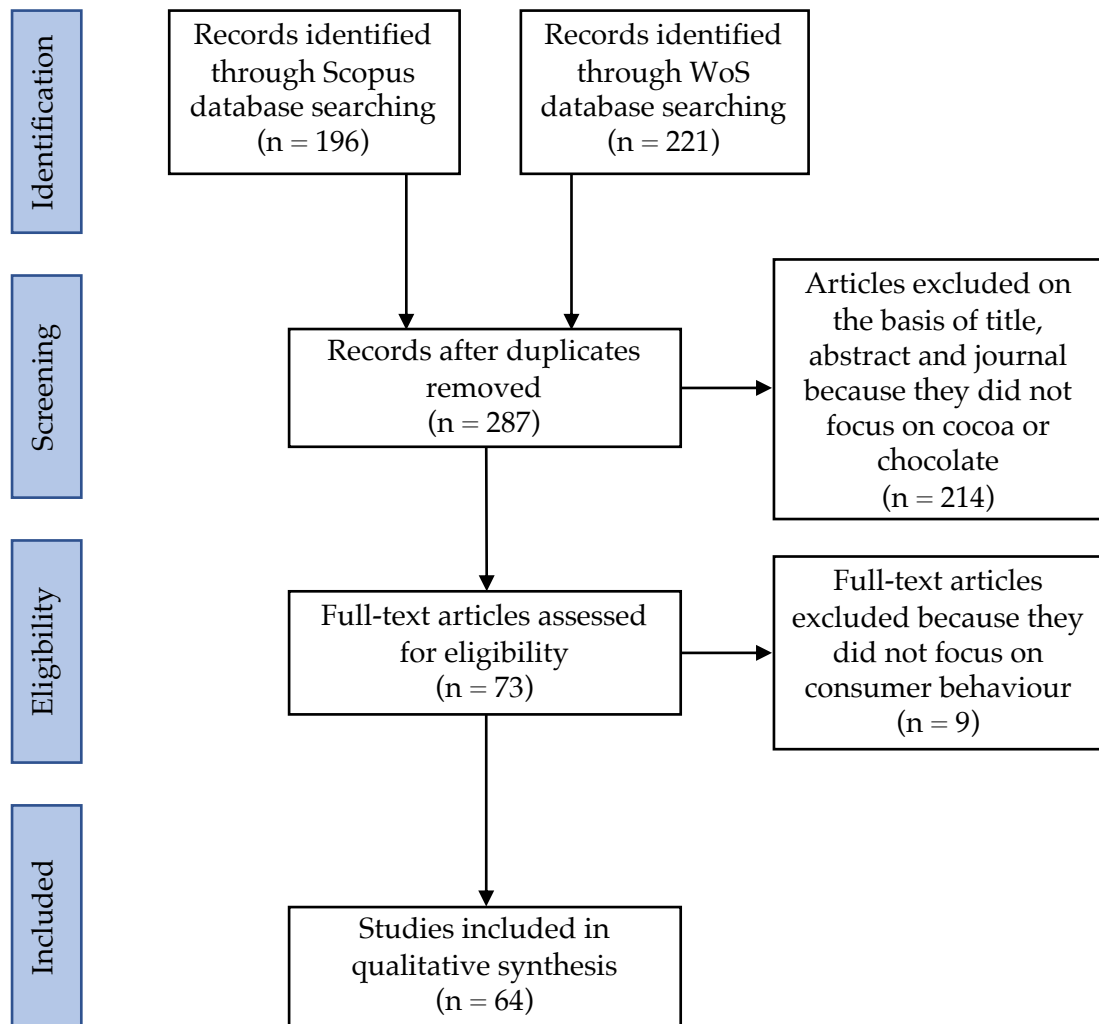


Figure 1. Steps and criteria of literature search and screening process using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram. Note: Wos stands for Web of Science.

2.1. Search Strategy

The research papers have been retrieved through a systematic search of peer-reviewed journals. Two databases have been used to collect the literature: Scopus and Web of Science. A combination of search terms was used to identify the studies that focused on consumer purchasing and consumption behaviour towards cocoa and chocolate. The authors identified a search string where four separate groups of words were combined and then applied to both databases (Table 1). The first group of words included “cocoa OR chocolate”. The aim is to include at least one of the two words identified, including multi-product studies. To ease the reading, the current paper will exclusively refer to the term chocolate. In the second group of words, the terms “consumer OR purchasing OR purchase” were included in order to focus the research on those studies based on the analysis of consumer purchasing and consumption behaviour research. The third group of terms included the following sequence of words: “perception OR behaviour OR attitudes OR attributes” OR “willingness-to-pay” OR “willingness to pay”. This combination of words aimed to retrieve the papers that focused on consumers’ perception, attitudes, behaviour and willingness to pay for different attributes. The present review excludes articles on the sensory perception of consumers. Thus, the string includes “AND NOT sensory” in the last group. Finally, restrictions have been placed on the document type, limiting the search to articles and reviews published after the year 2000. In Scopus, the research has been conducted in the field abstract, title and keywords for the first three groups of words, and in the abstract for the last group. In Web of Science, the search field was Topic. Through the specific combination of words and the limitation of the search field, a first group of articles was identified for further screening. The research paper databases were consulted in January 2020.

Table 1. Databases and terms used in this study and number of results obtained.

Database	Search String	Results
Scopus	TITLE-ABS-KEY (cocoa OR chocolate) AND TITLE-ABS-KEY (consumer OR purchasing OR purchase) AND ABS (perception OR behaviour OR behaviour OR attitudes OR attributes OR “willingness-to-pay” OR “willingness to pay”) AND NOT AND TITLE-ABS-KEY (sensory) AND DOCTYPE (ar OR re) AND PUBYEAR > 1999	196
Web of Science	TOPIC: (cocoa OR chocolate) AND TOPIC: (consumer OR purchasing OR purchase) AND TOPIC: (perception OR behaviour OR behaviour OR attitudes OR attributes OR “willingness-to-pay” OR “willingness to pay”) NOT TOPIC: (sensory) Refined by: DOCUMENT TYPES: (ARTICLE OR REVIEW) Timespan: 2000–2020	221

2.2. Selection Criteria

The research conducted on Scopus and Web of Science identified 196 and 221 articles, respectively, for a total of 417 articles. After elimination of duplicates, the remaining 287 articles were first evaluated on the basis of a) abstract, b) title, and c) journal. Then, the original database was reduced to 73 articles, which were analysed in depth by assessing the full text. Studies not in English, not focused on cocoa or chocolate or not related to consumer behaviour were removed. Studies in which chocolate was analysed only as a food ingredient (e.g., chocolate biscuits, chocolate cake or pudding, chocolate milk) were also excluded. As a result, a final set of 64 articles have been identified for an in-depth analysis of the research. A database was then built to analyse key data for each study. The key information included are: (1) author, (2) year of publication, (3) objective, (4) measurement method, (5) sample size, (6) sample composition, (8) data elaboration, (8) main research topics, (9) secondary research topics and (10) country. The description of primary studies included in the review can be found in Supplementary Materials. Thematic groups have been created to categorize the factors of chocolate consumption and purchasing consumer behaviour. This has allowed a clear and detailed understanding of the drivers that influence the chocolate consumer. Future research could build on the gaps highlighted in the current literature review.

3. Results

3.1. Methodological Approaches and Research Issues of Selected Papers

The revised studies addressed a number of research topics and adopted various methodological approaches. Table 2 shows the methodological approaches adopted in the research papers. Forty-two papers developed choice experiments, experiments in the field or laboratory, experimental auctions and eye-tracking. Nine papers conducted a survey, and seven conducted an exploratory study, including one with a qualitative approach through the use of a diary as a data collection method. Table 3 shows the different data collection methods used by various research studies. The most widely used data collection method was the close-ended questionnaire (forty-eight out of sixty-four studies). Nine of these also included open-ended questions. The other ten studies carried out interviews, diary reading and focus groups.

Table 2. Methodological approaches used in the selected studies.

	No.	Authors
Choice experiment	5	[3,4,16-18]
Experiments (in the field or in the laboratory)	28	[2,6,16, 19-43]
Experimental auctions	7	[21,22,34,44-47]
Eye-tracking	2	[48,49]
Survey	9	[3,4,13,50-55]
Qualitative study	2	[56-57]
Exploratory study	7	[1,5,56,58-61]

Table 3. Data collection methods used in the selected studies.

	No.	Authors
Questionnaire	48	[1-6,17,19,20-23,25,27,29-34,36-42,44, 46,47,49-51,53-55,58-69]
Interviews	5	[13,17,18,57,69]
Focus groups	4	[5,18,41,69]
Diary	1	[56]

The analysis of the 64 papers collected led to the identification of various preferences, attributes and factors that drive chocolate consumption and purchasing behaviour. These were identified as the main research topics and grouped into four categories: (1) personal preferences, (2) product attributes, (3) socio-demographic factors, and (4) economic attributes.

Taste and health-related reasons have been included in the category “personal preferences”, which influence chocolate consumer behaviour. “Product attributes”, which have been divided into Fair Trade, packaging, organic, brand, size, country of origin and genetic modification, affect the type of chocolate consumed. Furthermore, price and promotions, included in the “economic attributes” category, determine consumer purchasing behaviour. Finally, the influence of age, gender and income on consumers’ preferences have been grouped in the “socio-demographic factors” category.

Figure 2 provides a comprehensive picture of the topics and groupings of topics by number of research studies.

Past consumer research on chocolate consumption and purchasing behaviour has focused strongly on the issue of sustainability and ethical consumption (nineteen out of fifty-four papers). Most of the reviewed literature on sustainable consumption and purchasing behaviour used a willingness-to-pay approach [3,4,17,21,30,34,36,42,44,45,47,55], five of which through the auction system [21,34,44,45,47]. The use of visual stimuli within the research studies that focused on

sustainability issues has been applied in five studies [30,34,38,53,55]. Among them, only one has projected a video [30], whereas the other research studies have employed images of existing products or images modified ad hoc for the experiment. The choice experiment methodological approach has been adopted in five studies [3,4,16-18], using questionnaires and interviews as the data collection method. All papers dealing with sustainability issues have adopted questionnaires. One study created an online questionnaire, simulating a real shopping experience [40]. Another study took place at a shopping stand where Fair Trade products were sold, in order to observe consumer behaviour [23].

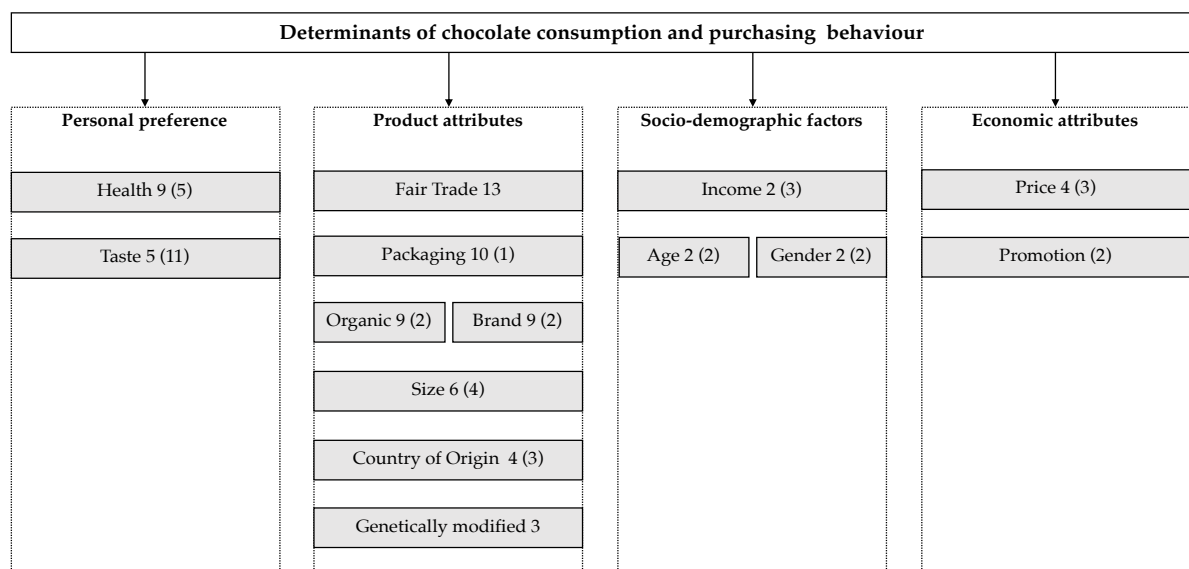


Figure 2. Research topics and frequencies—primary or secondary. Note: The number outside the parentheses is the topic frequency as the main topic. The number inside the parentheses is the topic frequency as the secondary topic. For example, nine papers address the health issue as the main topic, and five as a secondary one.

The effects of packaging, including portion size, on the chocolate consumer has been the second most explored issue. Packaging is crucial when choosing a food product, and especially so for chocolate. The research studies address the packaging topic from different perspectives. Two articles analyse the impact of sustainable packaging on the consumer, respectively through a choice experiment [17], and through an eye-tracking experiment [38]. Two articles analyse the effect that “deceptive” practices such as colour imitation [29] or deceptive air-filling of packaging can have [39]. Both use an experimental approach with visual stimuli. One research study observes consumers’ reactions to the exterior colour of chocolate [24]. Two research studies explore the consumer interest in packaging appearance and attractiveness [57,66] using a questionnaire and semi-structured in-depth interviews respectively. Finally, through an eye-tracking experiment on a

computer screen and an experiment using a questionnaire, two studies analyse how consumers focus on different information elements of packaging [25,48].

The relevance of the chocolate portion size on consumers was addressed by six studies [2,22,33,43,57,63]. They used different approaches and data collection methods. In particular, this topic was analysed through interviews, questionnaires (on-site and online), auction, games, and taste experiments.

Health is another key issue addressed. It was addressed in nine studies [25,26,31,32,35,49,50,58,66]. The health topic has been analysed, mainly through an experimental approach with the support of a questionnaire, except for two studies that used the implicit association test (IAT) to collect the data [26,35]. Of all sixty-four papers, the IAT was used only in this case. The use of visual stimuli is quite frequent. Among the studies that used pictures or real products, one used the eye-tracking method, analysing the time the consumer's gaze stays on information about health or taste claims [49].

Another key issue is the influence of economic attributes of chocolate on consumer choices. The product price limitedly impacts the chocolate consumer's purchasing behaviour. However, discounts and promotions contribute to drive consumers' chocolate purchasing habits. According to Davis, consumers tend to switch the brands to benefit from sales promotion [20]. The second study that addressed the issue of promotion is from Thaichon et al. (2018) [57]. Davis and Millner's (2005) [20] study uses a questionnaire, combined with open questions, while Thaichon et al. (2018) [57] adopt a more qualitative approach through the use of semi-structured in-depth interviews.

Furthermore, it is important to note the evolution in the issues addressed by research studies on chocolate purchasing and consumption over time. The interest in sustainability, in all its dimensions, economic, social and environmental, has begun to exercise greater curiosity since 2015. In the years from 2000 to 2015, six studies have addressed the issue of sustainability [17,21,23,30,44,45]. Bernard, Zhang and Gifford (2006) [21] addressed the issue of environmental sustainability, focusing on the consumers' perception of organic versus genetically modified (GM) chocolate. Then, consumers' attitudes towards Fair Trade sustainability was explored in 2008 [23]. From 2015 onwards, the number of studies analysing consumers' perceptions of chocolate sustainability attributes have strongly increased [3,18,34,36,38,40,42,47,53,55,69,70]. Chocolate packaging started to interest researchers in 2009 [24], and a focus on chocolate sustainable packaging followed in 2014 [17]. Only four studies deal specifically with the effect of price on the consumer, respectively in 2001, 2006, 2014 and 2018 [57-59,66]. Among the various attributes of sustainability, Fair Trade is certainly the one that consumers value the most. Price exerts a limited power on consumers who put taste before any other attribute.

The geographical distribution of the various topics (Table 4) provides interesting insights. Sustainability plays an important role in thirteen consumer studies in Europe [3,4,17,30,34,36,38,42,44,47,53,55,69] and four in North America [21,23,18,40]. No sustainability studies have been conducted in Asia or Oceania. Studies in Asia have been conducted in India [5,46,54,60,61], and one in Lebanon [64]. In Asia, the topics addressed were the influence of the country of origin, genetic modification, brand, demographic factors and product affection. Some of the studies carried out a cross-country analysis by comparing different European chocolate consumers' behaviours [58,67]. The issue of health is addressed for the first time in 2010, and only in six European focused studies [58,25,32,35,49,50], where it does not appear as a particular cause for concern for consumers. Packaging has been analysed seven times in Europe [17,24,25,29,48,38,39] and once in Australia [57], where it plays a relatively important role, both in terms of sustainability and attractiveness. Topics such as genetic modification and the economic attributes of chocolate have been addressed in different years and at different locations. Interest in GM chocolate does not appear in European studies, and it has not been addressed in the last four years. The influence of economic attributes, such as price and promotion, has been of interest to researchers in the first five years of the new millennium, and from 2014 onwards. No studies on the effect of promotion on chocolate have been carried out in Europe.

Table 4. Location and year of publications of main research topics.

Category	Main Topic	Location	Year
Personal preference	Health	Europe (6) n.a. (3)	2001, 2009, 2011 (2), 2013, 2014 (2), 2015, 2019
	Taste	Australia (1) Europe (3) n.a. (1)	2010, 2015, 2016, 2017, 2018
Product attribute	Fair Trade	Europe (10) North America (2) n.a. (1)	2008 (2), 2010, 2013, 2014, 2015 (4), 2016 (2), 2018, 2019
	Packaging	Australia (1) Europe (7) n.a. (2)	2009 (2), 2012, 2014 (2), 2015, 2016 (2), 2017, 2018
	Organic	Europe (5) North America (3) n.a. (1)	2006, 2008, 2010, 2014, 2015, 2016 (2), 2017 (2)

Brand	Australia (2)	2007, 2012 (2), 2014, 2016 (2), 2017 (2), 2018
	Europe (3)	
	Asia (2)	
	New Zealand (1)	
Size	n.a. (1)	2008, 2010, 2014, 2015, 2018, 2019
	Australia (1)	
	Europe (2)	
	North America (1)	
Country of Origin	n.a. (2)	2007, 2012, 2014, 2018
	Europe (2)	
	Asia (1)	
Genetically Modified	n.a. (1)	2006, 2014, 2016
	Asia (1)	
Socio-demographic factors	North America (2)	2016, 2017
	Income	
	Age	
Gender	Asia (2)	2012, 2016, 2017
	Europe (1)	
Economic attribute	Europe (2)	2001, 2006, 2014, 2018
	Price	
	Australia (1)	
Promotion	n.a. (1)	2005, 2018
	North America (1)	
	Australia (1)	

Note: n.a. denotes not available. These are studies that did not specify where the research was carried out.

3.2. Personal Preferences

3.2.1. Taste

Taste is the crucial factor when purchasing and consuming chocolate. Although perception of taste is extremely personal [16,57], it remains the key factor influencing chocolate consumer behaviour [3,4,51,57,62,64].

Past literature is consistent in arguing that consumers prefer the taste of handmade chocolate over commercial chocolate [13]. Taste is the dominant factor for loyal consumers of the Cadbury Dairy Milk brand [61].

Two interesting and intertwined concepts are developed in the studies of Enax et al. (2015) [34] and Didier and Lucie (2008) [44]. The first study supports that Fair Trade labelling has a positive influence on the perception of chocolate taste. The second study argues that the perception of Fair Trade labelling improves if the taste is good. This last statement is in line with Didier and Lucie (2010) [45] study, according to which, taste positively influences the willingness to pay for organic or Fair Trade products.

In recent years, research has explored the relation between taste and health. Healthy products are often perceived as not very tasty. The study of De Pelsmaeker et. al. [67] confirms this consumer perception. Consumers prefer chocolate sweetened with sugar rather than with sweetener. Chocolate consumers want to have a good taste, even if it is a healthier chocolate formulation. These results are in line with the study of Steinhauser, Janssen, and Hamm (2019) [49]. The authors reveal that consumers, despite observing health information for longer, will choose based on taste information.

3.2.2. Health

Although chocolate is seen as an “unhealthy” product [26] because of high-calories, the health factor has not been widely studied in chocolate consumption research. Studies support the idea that the health attribute has limited impact on chocolate consumer behaviour [32,50,66]. Advertisement focused on the health aspects of chocolate does not lead to particularly relevant results [25,49]. On the contrary, focusing on nutritional aspects, highlighting the benefits of this product, could lead to a great impact on sales [49]. The study by Visschers and Siegrist (2009) [25] analyses the consumer impact of nutritional labels with different formats. The chocolate products’ labels with reference or summary information on chocolate healthier nutritional values (e.g., average fat content) have a negative impact on consumer inclination towards chocolate, compared to labels with standard nutrition information. Detailed nutritional information on calories and fat content contrast with consumer chocolate primary association that it is a hedonic product [25]. One exception applies to Belgian consumers, who are more impulse-controlled [58]. De Pelsmaeker et al. (2017) [67] show that, when Belgians consume filled chocolate, they are governed by health concerns rather than the pleasure of the moment. Moreover, consumers are more likely to make healthier choices when exposed to information about costs. This stimulates the consumer’s sense of

self-regulation. Consumers are better inclined towards healthy food choices when the price is taken into account [31].

Consumers consider organic chocolate [53] and handmade chocolate [13] as healthier than conventional and commercial chocolate, respectively. The healthiness of the product positively influences the perception of product quality. Lembregts and van Den Berg's (2019) [43] study supports the idea that the consumer is more sensitive to more "discretizing" information (such as the number of chocolates contained) than to less discretizing information (such as grams), even if they express the same quantity at weight level. This shows that representing information in a more 'discretized' way would lead consumers to assess the information more carefully and thus make healthier choices.

The act of buying chocolate often occurs on impulse, according to an implicit mechanism without conscious awareness. Adding logos on the packaging, especially concerning wellness attributes, prolongs the time needed by the consumer to process the information received. Adding this information has a positive impact on behaviours mediated by explicit intentions, which is driven by rational reasoning [35].

Finally, the relation between consumers' demographic characteristics and chocolate health claims was limitedly analysed. Only one study deals with this topic [50], and supported the idea that the consumers' age does not influence choice when it comes to health, and that women take health information into account more than men.

3.3. Chocolate Attributes

3.3.1. Country of Origin

Research on the impact of country of origin (COO) attribute on chocolate consumption is limited. Overall, the presence of COO has a positive influence on the consumer. However, more attention should be paid to the effect of "made in". It has been observed that the country of production has much more influence than the country of origin. This creates a close correlation between the brand and the country with which consumers associate it [62,64]. A 2007 study supports the idea that the COO has a strong influence in the decision-making process of chocolate consumers [62], especially for Germans, whose perception of chocolate quality increases if the country of origin is indicated [68]. The COO influences consumers more than ethical attributes [4]. However, results show that in the case of such a low-involvement product, the consumer attaches more importance to factors that can be assessed more easily, such as brand and price [62]. These

conclusions are consistent with what was developed by Amhed et al. [64]. They support the idea that the effect of the chocolate COO attribute on the decision-making process is less relevant than taste and price when it comes to low-involvement products such as chocolate. Similar insights can be gained from a study by Lybeck, Holmlund-Rytkönen and Sääksjärvi (2006) [51] in which “price was considered less so, as was country of origin”. The authors also note that older people and women give more importance to the chocolate COO attribute compared to young people and men, respectively. In the study by Kozelová et al. (2014) [66], only 2% of respondents state that chocolate COO is important. However, these controversial stances may be due to the lack of information on the origin of ingredients [69], as a limited number of the studies explored the impact of COO on chocolate consumption.

3.3.2. Organic Labelled Chocolate and GM Product

Consumers mostly rely on organic labelling as a guarantee of human health and protection for the environment [3,17]. A study by Bullock, Johnson and Southwell (2017) [40] shows that the health attribute has a crucial effect on consumer choices. They argue that advertising has an effect only if it is “related to protecting one’s own and family health”, rather than “activating ethical values”. Banjarnahor, Napitupulu and Situmeang (2017) [70] stressed that chocolate advertised with self-benefit information, rather than green-benefit, is considered less expensive and of higher quality. Furthermore, an interesting observation about chocolate emerges from the Didier and Lucie (2010) [45] study. It states that organic labelling is an added value for the consumer, who will perceive the product as being of better quality. This means that the awareness of buying a certified sustainable product improves the qualitative perception that the consumer has of the product. Hidalgo-Baz, Martoz-Partal and Gonzalez_Benito (2017) [53] also state that this is less accentuated in vice products, such as chocolate, rather than virtue products.

Consumers often have difficulties in understanding the meaning of labels. Consumers tend not to understand the difference between organic and Fair Trade [40], and to believe that organic chocolate uses Fair Trade cocoa [3]. Rousseau (2015) [3] adds that a large number of consumers do not believe that the information on organic labels is reliable. Moreover, Young and McCoy (2016) [18] discover an interesting connection between choosing a sustainable label and the need to “reduce one’s guilt”. The consumers’ approach towards buying organic goods or goods with another sustainability certification is similar, as they both satisfy a sense of responsibility.

Consumers who buy organic are also interested in the fact that the product is not genetically modified. Moreover, consumers who avoid genetically modified chocolate are those who buy the organic option. The fact that the product is not GM becomes more important than it being organic,

and more important for organic consumers than for consumers of other types of chocolate [21]. In general, millennials are limitedly concerned about GM attributes [18]. Consumers' perceptions of GM products tends to depend on the level of knowledge and information consumers have on the topic. This is generally low [46]. In general, the willingness to pay for GM chocolate increases when both positive and negative information is provided on the packaging rather than just positive information [46].

Sustainability attributes have more effect on consumers when combined among themselves. The organic label is more attractive when presented in combination with other sustainable certifications, rather than presented individually [17]. These arguments stand in contrast with Didier and Lucie (2008) [44], who found that “the joint application of environmental and social labels on the same product induces a sub-additivity to the willingness to pay (WTP) compared with the WTP for the two dimensions considered separately”. In addition, the willingness to pay for the organic attribute is higher for branded products [44]. With regard to GMO products, it was noted that consumers are willing to pay more when both positive (e.g., minimum use of pesticides required) and negative (e.g., unknown effect on flora, fauna and soil) information is present rather than only positive information or lack of information [46].

3.3.3. Fair Trade Labelled Chocolate

Chocolate Fair Trade has been widely studied. Past studies approached it from different perspectives, such as the willingness to pay, the preference of Fair Trade certification over other sustainability attributes or conventional products, and the different purchase intention based on socio-demographic factors. Past research supports the idea that consumers prefer the Fair Trade label compared to other sustainability labels [3,17]. Most consumers are willing to pay more for certified products than for those without certification [17], and among certifications, they are willing to pay more for “Fair Trade” than for other certifications (Rain Forrester Alliance or Carbon Footprint) [47]. However, consumer awareness of ethical issues is limited. A study by Aktar (2013) [30] shows that consumers' perceptions of a chocolate company does not change, even when they are exposed to information about the use of unethical practices by that company. Even the WTP for that chocolate is not affected.

An interesting finding emerges from the Teyssier, Elité and Combris (2015) [36] study, which states that the willingness to pay a premium price for Fair Trade chocolate is closely linked to consumer self-image and the need to diminish a personal sense of guilt [18]. The research conclusions support the fact that food choices are motivated by both the consumers perceived self-image and how they want to present themselves to others. This study notes how many consumers

are influenced by the presence of an audience when choosing chocolate. The fact that their choice can be seen and observed by someone increases the premium price they are willing to pay for certified sustainable chocolate. This is motivated by the consumer's need to obtain social approval by buying ethically [42]. Furthermore, past research support the idea that "pro-ethical" advertising campaigns have a positive impact on the consumers' willingness to pay and purchase intention toward Fair Trade chocolate [55]. However, taste and price, followed by the origin of the ingredients, remain the main drivers for consumers of chocolate [3,4,44]. The evaluation of the Fair Trade label also depends on the consumer's appreciation of taste [44,45], and vice versa [34]. The more consumers appreciate the taste of Fair Trade chocolate, the more positively they will value this certification. The study by D'Astous and Mathieu (2008) [23] comes to interesting conclusions. On one hand, if the consumer's attention is not particularly high, the communication of information on Fair Trade in a "pallid" way appears to have a greater effect than information transmitted in a clear and "vivid" way. On the other hand, the immediacy and clarity with which information is communicated to the consumer does not have a particular effect if his attention on information is high.

Socio-demographics factors influence Fair Trade chocolate consumption. According to Mai (2014) [17], there are limited differences between men and women, and between different age groups, with respect to their willingness to pay for Fair Trade chocolate. Some studies show that women consider Fair Trade certification more important than men. Vecchio and Annunziata (2015) [47] claim that seniors, women and consumers with high incomes are willing to pay a higher price for Fair Trade chocolate. According to Poelmans and Rousseau (2016) [4], young women preferring white chocolate do not value the Fair Trade label. Consumers positively inclined towards the Fair Trade label tend to prefer chocolate bars and milk chocolate[4].

Brand has a positive impact on consumers and their intention to buy a certified Fair Trade product. Comparing market prices with consumers' willingness to pay for this attribute, Didier and Lucie's (2008) [44] study claims that, without the brand, consumers are willing to pay less than the actual price for Fair Trade chocolate.

3.3.4. Brand

Many studies have investigated the effects of various extrinsic attributes of chocolate on consumer choice, including the role of the brand. According to many authors, brand affects consumer's choice of chocolate [54,62,64,66]. Consumers are loyal to the brand as they associate it with particular parameters of quality and taste, which they are unlikely to abandon for other brands [62]. For this reason, the effect of advertising certainly has a positive impact on the consumer, but

not a decisive one [54]. Affection towards a specific image presented on the product and the buying habit of a specific product can lead consumers to not change brands. If the consumer is not familiar with the product, even in the case of chocolate, it is difficult for it to be incorporated into the consumer's eating habits [37]. Ahmed et al. (2012) [64] argue that chocolate is a low-involvement product. Thus, brand has a greater impact than price and country of origin (COO). The store-brand is preferred by middle-aged consumers [51]. Previous chocolate consumption experiences lead consumers to become loyal to a particular brand, thus excluding others. An interesting study conducted by Bogomolova and Millburn (2012) [65] showed that brand, competition and consumers-related-motives are the main factors that influence chocolate consumers. In particular, unavailability or unawareness of a brand, preference for another brand or another taste, and health concerns are some of the reasons why consumers may not consider another brand. According to Bogomolova and Millburn (2012) [65], those who have never experienced a brand are more likely to exclude it a priori than those who have experienced it before. The non-exception of a brand can be determined by a lack of interest or by force of habit, which can lead the consumer to not change the familiar choice. Without familiarity with a brand, there would be no repurchase of that specific brand by the consumer [57]. Only one study analyses the consumer response to chocolate commercialised with private labels versus corporate brands [52].

3.3.5. Packaging

Shekhar and Raveendran (2017) [71] and Thaichon et al. (2018) [57] argue that packaging plays a key role in chocolate purchasing behaviour. The packaging is particularly relevant as chocolate is often purchased as a gift for someone else. Thus, they argue that the quality of the chocolate is as important as the packaging that wraps it. If the consumer is not familiar with the product, he/she will choose the one with the most pleasant packaging. A study by Rebollar et al. (2015) [48] observed that the consumer's eye is primarily drawn to the size of the information on the packaging, and will tend to focus on the elements from left to right, and from top to bottom. The packaging message that combines these two patterns will be perceived by the consumer with a greater impact. Sustainable packaging positively influences the consumer's perception of the product quality. This becomes particularly effective when the chocolate product itself is not certified as sustainable [38]. According to Mai (2014) [17], sustainable packaging is not particularly valued by consumers when it comes to high quality chocolate. However, it has more influence than sustainable certifications themselves, especially among the elderly.

Wilkins, Beckenuyte and Butt (2016) [39] focus on consumer reactions regarding a "deceptive filling" of packages caused by a high volume of air filling rather than chocolate. The

study shows that consumers may initially be deceived by “misleading packaging and slack filling”. Through these strategies, consumers may initially be enticed to buy that package. However, this mechanism is not likely to last, having negative long-term repercussions [39]. Only one study claims that chocolate packaging is the attribute least taken into account by consumers [66].

The colour of chocolate also influences the consumer’s appreciation of a specific chocolate. A study by Shankar et al. (2009) [24] on M&Ms showed that consumers find brown M&Ms more “chocolatey” than coloured M&Ms, at least the green ones. Imitation of the brand’s package design is more frequent than expected, especially in the case of chocolate. What emerges from van Horen and Pieters (2012) [29] is that consumers are quite aware of the possibility that some brands may resort to such “deception” by imitating certain features such as logo, colour or theme. Among them, the most accepted imitation by consumers is that of the theme, which they find more acceptable and less unfair.

3.3.6. Portion Size

Chocolate is a product of indulgence that consumers see as a gratification for themselves or as a gift for others [2-5,56,60,61]. Chocolate is also seen as a comfort food. Consumption increases when we are sad and the reason is not dependent on us [6]. For those who buy chocolate for their own consumption, consuming small units rather than one large unit gives the idea of acting more impulsively and therefore eating more. Thus, if consumers are given the same amount of chocolate as one single large portion, in separate units, they will tend to eat less [2]. Eating smaller quantities of chocolate rather than the same quantity in one piece convinces the consumer that they have less product available [22]. This forces them to eat it, taking more time to extend the tasting experience. Consumers will enjoy the tasting experience more, improving the perception of taste and satiety [33]. Small portions, in addition to being tasted more carefully, are also associated with a more “premium image and higher quality” chocolate [57]. The size of the pack also influences the occasion of consumption. Larger packs are purchased to be consumed with other people, at work or at a party, smaller ones during sport as snacks. Finally, a further consideration emerges from the Vermeer, Bruins and Steenhuis (2010) [63] study, where it is observed that consumers are more inclined to consider the whole chocolate package as a portion and do not consider the units contained to be single portions. In addition, the perception of the portion size changes according to how “discretized” the information about that portion is given. Indicating the number of product units rather than the weight has a greater effect on consumers [43].

Finally, studies support the idea that the limited choice you have, the more satisfied the consumer will be with the choice they make, even in the case of chocolate [19].

3.4. Socio-Demographics Factors

A limited number of studies focused on the effect of socio-demographic factors on chocolate consumers' purchasing and consumption behaviour. This section presents past literature's findings focusing on gender, age and income.

3.4.1. Gender and Age

Age and gender impact on consumers' intentions to purchase certified chocolate. In general, the willingness to pay for chocolate is higher for women and the elderly [47]. Women are sensitive to sustainable certifications, with particular attention to the organic label [17,47]. However, Mai (2014) [17] supports the idea that women may not have a higher willingness to pay for chocolate sustainability labels. Men and women have a similar willingness-to-pay towards organic chocolate and Fair Trade.

Age may influence consumers' attitudes towards sustainability labels [17]. Bullock, Johnson and Southwell (2017) [40] show that sustainability advertising has the biggest impact on consumers under 40 years of age. This is in contrast to the Chawla and Sondhi (2016) [60] study, which supports the idea that the search for sustainable values is effective when describing especially young consumers' behaviour. Older people prefer foreign brands, young people prefer national brands [5]. Women, especially normal-weight women, are more sensitive to images of models placed on the chocolate packaging compared to overweight women. It has been shown by Durkin, Rae and Stritzke (2012) [27] that overweight women, when exposed to images of overweight models on the packaging, reduce their guilt in purchasing the product, but do not limit chocolate purchasing.

3.4.2. Income

Results on how consumers' income impacts chocolate consumers' behaviour are contradictory. The income factor seems to have no impact on the perception of chocolate [66] but has a positive influence on the consumer's willingness to pay [47]. Few studies have investigated this aspect. In particular, one study focused primarily on this socio-economic trait, exploring the purchasing behaviour of consumers with high average income [3].

According to a study by Kozelová (2017) et al.[66], income has no particular influence on the consumer's purchase of chocolate. Income plays a key role in sustainability-certified chocolate. High income has a "positive and statistically significant effect" on consumers' willingness to pay

for sustainable labels [47]. Rousseau's (2015) [3] study investigated the effect of income on consumer choice. This research study finding confirms the positive effect of consumers' high income on the intentions to buy certified chocolate.

3.5. Economic Attributes

The impact of price on chocolate consumers' purchasing and consumption varies [57-59]. The literature shows that different categories of consumers by age, gender, income and education are influenced differently by the price of chocolate [57-59]. Chocolate is not identified univocally as an affordable luxury good or a necessity by consumers [1]. A study by Stamer and Diller (2006) [59] identified five different categories of chocolate consumers, ranging from those who only consider price and those who only consider quality and brand. These categories differ in income, work career, family size and brand or quality consciousness. The other three groups include more conscious buyers, with higher career expectations, and who value quality and brand more. Lower-medium social classes, with no career orientation and large and uninformed families, give more importance to the price compared to other categories.

In a study by Kozelová (2017) et al. [66], the price is one of the attributes most taken into account among chocolate consumers. The price may be an incentive to consume less chocolate, especially for people on a diet [31]. Consumers do not consider the price particularly relevant if the chocolate tastes good. However, it is more important than the country of origin [64]. In a study by Thaichon et al. (2018) [57] on consumers of Cadbury Dairy Milk, price is not as important as taste. However, a promotional sale on other brands could lead consumers to change their purchase [57]. The effect of the promotion on the consumer has not been particularly deepened so far. One study focuses on the analysis of which discount format has the greatest influence on chocolate consumers. This study shows that consumers are mainly attracted by the "buy one-get two" formula compared to "rebates" from the list price or simple price reductions [20].

3.6. Limitations

The present review has some limitations. All the analysed articles are written in English, thus excluding the results of studies in other languages. Moreover, only two databases were used for the selection of the papers. It would be convenient to consider using multiple sources. Only articles and reviews were considered from 2000 onwards. Finally, the search does not include articles published after January 2020, and these may have implications for future research.

4. Further Areas of Research

Over the years, how chocolate was consumed has changed from its origins to the present day. Initially, chocolate was a raw energy drink consumed at the time of the discovery of cocoa. Today, chocolate is a food product easily accessible, purchased for personal pleasure, which provides a sense of indulgent luxury.

Undoubtedly, taste plays a significant role for chocolate consumers, and the literature has extensively explored its importance. The literature review carried out supports the idea that chocolate is consumed to obtain a small temporary gratification. It is not a product in which health consideration is a major concern. The health aspect is hardly taken into account by the consumer, especially if it is at the expense of taste.

A beneficial area for further research could be to investigate which health and nutritional aspects consumers are most concerned about when they buy chocolate. This may provide insights into the development of new products that satisfy the consumers' increasing health-orientation. Future research may explore healthier chocolate reformulation and new product concepts, and innovative chocolate ingredients might be of interest to the consumer. Indeed, the single research study addressing the consumer's interest in chocolate with a sugar substitute supports the idea that consumers are limitedly interested in such a feature.

It is important that consumers perceive chocolate as a product that can be both healthy and tasty. Hence, it is useful to investigate how consumers taste healthier chocolate recipes in order to improve their perception. Such innovative chocolate formulations would lead to a wholesome and equally satisfying choice.

Moreover, the current literature review supports the idea that price and promotion are under-investigated issues in relation to chocolate purchasing and consumer consumption behaviour. The buy-one-get-two formula is the promotion strategy most appreciated by chocolate consumers. This promotion may lead consumers to change their familiar chocolate brand. Further research could explore how consumers' consumption and purchasing behaviour change according to their perception of the price. It is relevant to understand consumers' knowledge and perception of the price partition between the various actors in the chocolate agro-chain. In particular, future research may investigate consumers' perceptions of the price distribution between chocolate producers, processors and retailers. Ensuring a perceived fairer remuneration may lead consumers to make more economically sustainable choices.

Due to the lack of studies correlating the emotional status of the consumer and his or her chocolate purchasing choices, it would be worthwhile to explore how purchasing behaviour changes

according to the consumer's attitude. The research would complement recent results which state that chocolate purchasing is deeply affected by the mood of the consumer [6,72].

Future research may explore how consumers' behaviour changes in consideration of the context of chocolate use. There is a need to better understand how chocolate purchasing and consumption behaviour is influenced by the different occasions of use (e.g., chocolate used for cooking rather than a product to be eaten directly), and by the different occasions of consumption (e.g., for festivities or special occasions rather than for daily consumption). Such studies would allow us to obtain a more comprehensive understanding of chocolate consumer behaviour. This would allow us to better target a greater number of consumers, and to create new channels and new sales possibilities for chocolate products.

5. Conclusions

The present systematic analysis of the literature aimed to understand consumers' consumption and purchasing behaviour towards chocolate. The review allowed the categorisation of the factors influencing chocolate consumers in four groups: personal preferences, chocolate product attributes, socio-demographics factors, and economic attributes. This categorisation provides a comprehensive overview of the research themes, and of the methodological approaches adopted by past research. According to the reviewed literature, the methodological approach mostly adopted has been the experimental approach, both in the field and in the laboratory. The most widely used data collection tool was the questionnaire.

The consumer behaviour towards chocolate sustainability attribute is a key topic among researchers. The first study on sustainability was carried out in 2006, and it has significantly expanded since 2015, with specific interest in European studies. While it has been confirmed that chocolate is seen by consumers as a product of indulgence, and its purchasing and consumption is mostly driven by taste, it can also be stated that the Fair Trade sustainability attribute of chocolate is the sustainability product attribute that most attracts the consumer. Nevertheless, consumers are mainly motivated by their self-image, and the way they want to present themselves to others, rather than by a real interest in sustainability issues.

A chocolate attribute with a great impact on the consumer is the brand, which is rarely abandoned, representing for consumers particular parameters of quality and taste. Among other chocolate attributes, packaging and portion size play a fundamental role in the choice of chocolate. As chocolate is often purchased as a gift, it is important that it is not only good, but also that the packaging is attractive. Moreover, analysed studies concluded that small portions improve taste perception. The portion is smaller, the tasting time is longer and the perception of taste improves.

The health topic is mainly related the development of healthier alternative chocolate. However, it is not a major concern for consumers.

The chocolate consumers' socio-demographic factors and the chocolate product economic attributes have been limitedly explored in the literature. The analysis of the socio-demographic factors supports the idea that women and young people consider sustainability attributes as being more important compared to men and old people, respectively. However, men and women are equally willing to pay for these attributes.

The results on the influence of income on chocolate purchasing behaviour are contradictory. Income may make a difference when it comes to certified sustainable chocolate. This finding confirms the limited role of the price attribute on chocolate. As mentioned earlier, chocolate is a product mainly consumed for gratification or purchased as a gift. In both contexts, the economic attribute is not the first selection criteria driving chocolate consumer purchasing behaviour. Interesting, but limitedly explored, is the influence of promotion on chocolate consumers' purchasing and consumption behaviour. If taste is the factor that most increases loyalty to a specific product, promotion is the driving factor that could lead the consumer to betray the familiar brand for another.

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CHAPTER 2

Original Research

Does fairness matter? Consumers' perception of fairness in the agro-food chain

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Abstract: Defining 'fairness' in the agro-food sector is a challenging task. There is no single definition of fairness and the literature does not provide a complete conceptualisation from the consumer's point of view. The current research seeks to explore the consumers' interest in fairness and ethics in the agro-food chain by exploring (i) a comprehensive theoretical framework to conceptualise fairness from a consumer perspective, and (ii) the consumers' perceived importance of different food attributes as fairness-related aspects. Literature review and focus groups allowed for the creation of the final survey to be submitted to consumers. 529 valid responses from a predominantly Italian female sample were collected. Data were elaborated with Exploratory Factor Analysis and ANOVA test. The research identified five dimensions of fairness: Fair price, Environment, Networking, Short chain and Working condition. Also, it emerged that age influences consumers' perceived importance of products with fair attributes. This research contributes to the development of a fairer and more sustainable food system by identifying perceptions of agro-food chain fairness and establishing a link with food shopping intentions. The research provides companies with suggestions on how to expand sales by reaching a greater number of consumers.

Keywords: fairness, ethic, agro-food chain, consumer, perception, purchasing behaviour.

1. Introduction

Defining 'fairness' in the agro-food sector is a challenging task. The concept of fairness in agro-food chains has been refined over time. In recent years, researchers addressed fairness, ethics or justice, often used as synonyms, mainly from the farmers' point of view. Since the early 2000s, falling prices have seen farmers complain of low profits and unfair working conditions (Busch & Spiller, 2016). From dairy farmers to workers in tomato fields, protests have involved workers all over Europe, making fairness and justice issues of primary importance for the European Union (EU) (ANSA, 2021; Nadotti, 2019). In June 2018, the European Commission presented legislative proposals for the new Common Agricultural Policy focusing on rural community development and environmentally sustainable farming (European Commission, n.a.) with the aim of protecting workers and supporting their work. One year later, the EU issued a directive (2019/633) on Unfair Trade Practices (UTPs) that aims to protect farmers and their organisations (e.g. cooperatives) (European Commission, 2021; Gudbrandsdottir et al. 2021).

Past literature has often focused on fair price for producers (Andrés-Martínez et al., 2013; Bolton et al., 2003; Briggeman & Lusk, 2011; Gielissen & Graafland, 2009; Xia et al., 2004; Singh et al., 2021) and on fair price distribution along the chain (Samoggia et al., 2021). However, as mentioned above, the economic dimension of fairness captures only part of a wider phenomenon. Several international organizations have identified various dimensions to describe the concept of fairness. Fairtrade certification includes a range of economic, environmental and social criteria that must be met by producers and traders (Fairtrade, n.d.). The Food Ethics Council also sets its standards on the concepts of 'fair shares', or equality of outcome; 'fair play', or equality of opportunity; and 'fair say', or autonomy and voice (Food Ethics Council, 2020). Food and Agriculture Organization (FAO) identified sustainability and transparency as fundamental principles for a fair food system (FAO, 2021). Moreover, there is a considerable amount of academic literature demonstrating that fairness in agro-food chain extends beyond the concept of sustainability, integrating aspects of honesty, level of information shared, integrity as well as management, organisation, and respect (Shaw et al., 2005, Chang & Lusk, 2009; Gielissen & Graafland, 2009; Konuk 2017, McGarraghy et al., 2022; Nguyen & Klaus, 2013).

However, academic literature has had only limited focus on the consumer perspective on fairness especially along the entire food chain (Maas et al., 2022). So far, literature focused on the fair price that consumers are willing to pay for food products, or the fair price distribution along the chain with a focus on farmers. Though there is broad agreement on the need to transition to a more fair food system (Allen and Gillon, 2022), consumer potential in shaping a fair food system has

often been overlooked. Given the potential of consumers in shaping the supply chain, it is crucial to understand which aspects define fairness to better meet their needs.

Thus, the current research aims to fulfil the gap by exploring consumers' perception and interest of fairness in the agro-food chain. The study aims at defining: (i) a comprehensive theoretical framework to conceptualize fairness from a consumer perspective, and (ii) the consumers' perceived importance of food attributes taking into account various aspects, including fairness, product characteristics and consumer habits. Ultimately, the outcome of this research might be utilized to increase the earnings of fair products market.

Review of literature

The following figure integrates the fairness framework presented by Busch and Spiller (2016) with the concept of Environmental fairness, included by the Food Ethics Council (2020) in the Food Justice report (Figure 1). It provides an overview of the concept of fairness and its dimensions from a general perspective. It incorporates the concepts of distributive fairness, interpreted as the fairness of price received (Adams, 1965; Bolton et al., 2003; Briggeman & Lusk, 2011; Gielissen & Graafland, 2009; Haitao Cui et al., 2007; Lu et al., 2021; Zitzmann & Dobhan, 2010), procedural fairness, the perceived fairness of the procedures used to determine price distributions (Thibaut & Walker, 1978), interactional fairness, the quality of employees' interpersonal treatment (Colquitt et al., 2001; Bies & Moag, 1986), and environmental fairness, respect for the environment (FEC, 2020). Past research conceptualised interactional fairness as the third dimension of fairness (Colquitt et al., 2001) or as the social part of procedural fairness (R. Folger & Konovsky, 1989).

Distributive Fairness

The concept of distributive fairness was introduced by Adams in 1965 who stated that if the relationship between the single actor's inputs and outputs is balanced then the outcome is perceived as fair (Konovsky 2000). The concept of outcome is often defined as the "price" that each actor in the chain receives for their products. In general, a price is fair when all parties are satisfied. This is why the concept of distributive fairness is often associated with the concept of fair price distribution (Lu et al., 2021; Cui et al. 2007).

Even in the case of distributive justice, there are different perspectives. From a producer's perspective, fairness concerns the price they get for their products (Hellberg-Bahr et al., 2012).

From a consumer perspective, the distribution is fair when producers get the highest share and the rest is distributed equally to other stakeholders (Busch & Spiller 2016). Consumers believe that they are treated fairly when the product they buy gives them good value for money (Nguyen & Klaus, 2013). Price increases are also seen as fair if small or poor stakeholders get a benefit rather than large and powerful ones (Gielissen & Graafland, 2009).

Procedural fairness

The concept of procedural fairness is commonly linked to agreements, negotiation processes and bargaining power. It was introduced by Thibaut and Walker (1978) and it deals with the procedures used by the price decision-maker rather than the actual outcome achieved. In fact, procedural fairness can be defined as equity related to the procedures used to achieve outcomes (Konovsky, 2000; Korsgaard, 2002). Outcomes will be perceived as fairer if the process that generated them is considered fair by those who participated in the decision making-process (Folger, 1977). A fair procedure must be consistent, impartial, open to all, transparent and credible (Lewicki & Bunker, 1995; G. E. Bolton et al., 2005). A procedure is considered unfair when the bargaining process does not take place or when it is perceived as unfair (Thal, 1988; Druckman & Wagner, 2017).

The literature does not clarify who is responsible for ensuring certain standards at economic and social level. It is not clear whether it should be the retailers or processors who guarantee a fair price to farmers for their products (Busch & Spiller, 2016; Gielissen & Graafland 2009) or the consumers themselves by paying a higher price (Gielissen & Graafland 2009). Policy makers also have a great responsibility in ensuring a fair food chain by creating policies that ensure farmers a decent livelihood and promoting information campaigns for more careful and conscious choices (Busch & Spiller, 2016).

Interactional fairness

Whether it is the third dimension of fairness or an aspect of procedural fairness, interactional fairness is about the intention behind every action (Rabin, 1993). Introduced by Bies and Moag (1986), the concept of interactional fairness was subsequently subdivided into interpersonal fairness and informational fairness (Greenberg, 1990). The former refers to the honest and respectful behaviour of chain trading partners. The latter refers to the quantity and quality of information shared (Busch & Spiller, 2016).

In the agro-food sector, integrity is mainly about how producers are treated. Everyone must be guaranteed a job that allows to have a good standard of living, both economically and in terms of safety, and that guarantees equal opportunities such as adequate education. No exploitation, intimidation or abuse should be accepted (Fairtrade, n.d.; Food Ethics Council, 2020). Gender policies should be developed and support programmes for disadvantaged people should be guaranteed (Fairtrade, n.d.; FAO, 2021). Any kind of discrimination, be it gender, marital status or ethnicity, should be avoided (Fairtrade n.d., Food Ethics Council, 2020). Furthermore, an ethical agro-food chain should prohibit forced and child labour (FAO, 2021; Fairtrade n.d.), support the community by encouraging the work of small-scale producers (Chang & Lusk, 2009), guarantee producers long-term “contract” (Fairtrade n.d.), and finally, ensure facilities to allow producers to manage the Premium price (FAO, 2021).

Environmental fairness

Often included within the concept of sustainability, environmental protection is included as a fundamental part to describe fairness in food systems (FEC, 2020; Zamzow and Basso, 2022). Past literature does not present a uniform picture in describing consumer interest in environmentally sustainable products. According to Kit et al. (2018), the environmental-conscious food market expansion is due to consumers' growing interest in the environment. However, although the topic is much debated today, the demand for eco-friendly products is lower than would be expected (Kamalanon, Chen & Le, 2022). A study by Moslehpour (2021), shows that it takes a tangible element like sustainable packaging to get positive attitude towards environmentally sustainable products. Attitudes, environmental concerns, environmental knowledge, and subjective norms, are among the major positive drivers of green purchase behaviour (Wijekoon & Sabri, 2021; Young et al., 2020). Some organisations, such as FAO or Fairtrade, deeply addressed the environmental topics setting various key issues for agro-food system regarding the environment. A much-debated topic when it comes to environmental ethics is the use of genetically modified organism (GMO). Opinion on genetically GMOs is still controversial (Wilson, 2021). The greatest concerns relate to the potential danger to human health or the environment (FAO, 2022; de Olde & Valentinov, 2019; Fairtrade, n.d.; Peano et al., 2019; Zimmerer et al., 2019), but also to how right it is to 'unnaturally' alter nature (Weale, 2010). The naturalness of food is in fact perceived as a positive aspect (Roman et al., 2017; Korzen et al., 2011; Rozin et al., 2004). Carbon footprints, e.g. carbon emissions from energy used in the manufacture of fertilizer and for transport, should be reduced. Waste, whether of food, water or materials, should be minimised (FAO, 2021; de Olde & Valentinov, 2019;

Bagherzadeh et al., 2014; Fairtrade, n.d.). Responsible use of resources should be ensured, especially in reducing the water footprint, i.e. how much water is used in food production and processing (Fairtrade, n.d.; FAO, 2021; Peano et al., 2019).

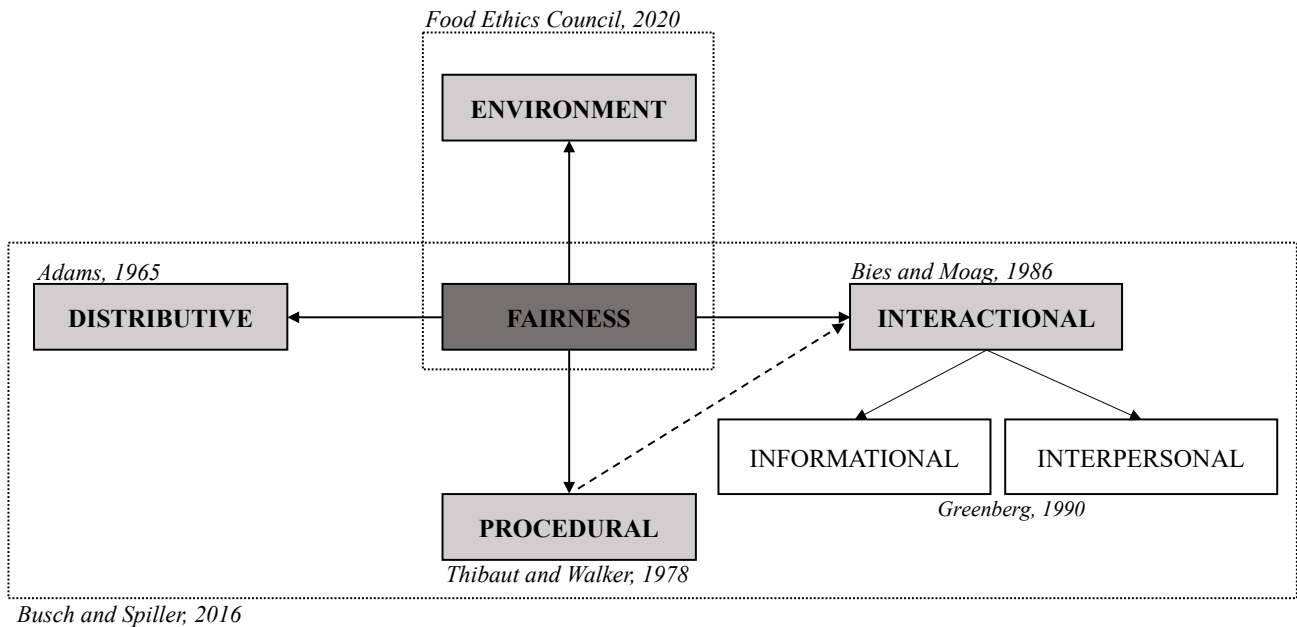


Figure 1 Fairness in agro-food chain

2. Methodology

2.1 Methodological framework of the research

The methodological framework of the research included four different steps (Figure 2): Step 1) literature review, Step 2) semi-structured online interviews with consumers and validation of the items list, Step 3) survey finalization and submission, and Step 4) data elaboration. The first two steps allowed for the creation of the final questionnaire to be submitted to consumers (third step), while the fourth step lead to consumers' fairness perception and relevance in food purchasing.

In particular, the first step of the present study aimed at creating an initial group of items regarding fairness in the agro-food chain retrieved from several sources. The websites of Fairtrade International, Food Ethics Council, and Food and Agriculture Organization (FAO) were consulted in addition to the most relevant academic studies on the research topic retrieved from Scopus database. Since the concept of fairness does not have a clear and unique definition, the purpose of step 1 was to collect aspects potentially related to a broad idea of fairness, focusing on the consumer's point of view. These aspects were then organised in an Excel file and divided into macro-dimensions, dimensions and sub-dimensions in which fairness can be classified. This step

allowed the creation of an initial pool of 90 items. After merging and removing duplicate, redundant or non-applicable items, the authors selection process brought to a final set of 39 items.

The second step consisted in organizing a series of online interviews with consumers. The aim was to select the fairness items and to add those not identified by the literature. Due to the pandemic situation, the foreseen interviews were held online and involved a limited number of consumers (Kite & Phongsavan, 2017; Tuttas, 2015; Stewart & Williams, 2005; Burton & Bruening, 2003). Semi-structured interviews with 11 consumers have been organised at the end of February 2021 and included open-ended questions asking about the perception of the concept of fairness in food chains. Consumers were contacted through the mailing list of an agro-food company selling and distributing local food. In order to invite consumers to participate, two reminder e-mails were sent at intervals of one week. Participants received a 15% discount on a minimum purchase of €30 as a reward for participating.

The purpose of the third step was to test and finalise the survey structure and submit it to consumers. 3 items were added based on interviewees feedback reaching a final pool of 42 items (Table 1). The full set of items was reorganised into dimensions for easier understanding by consumers. The list of items was then tested with 4 experts in consumer food behaviour to refine unclear questions and develop a robust data collection instrument. After suggested fine-tuning the survey was submitted to consumers. The online survey has been administered with the support of Qualtrics, an online data collection software.

The fourth step consisted in data analysis. First, an EFA was conducted to identify the various dimensions of fairness. Then, an ANOVA was conducted to analyse the relationship between sustainable consumption and socio-demographic characteristics.

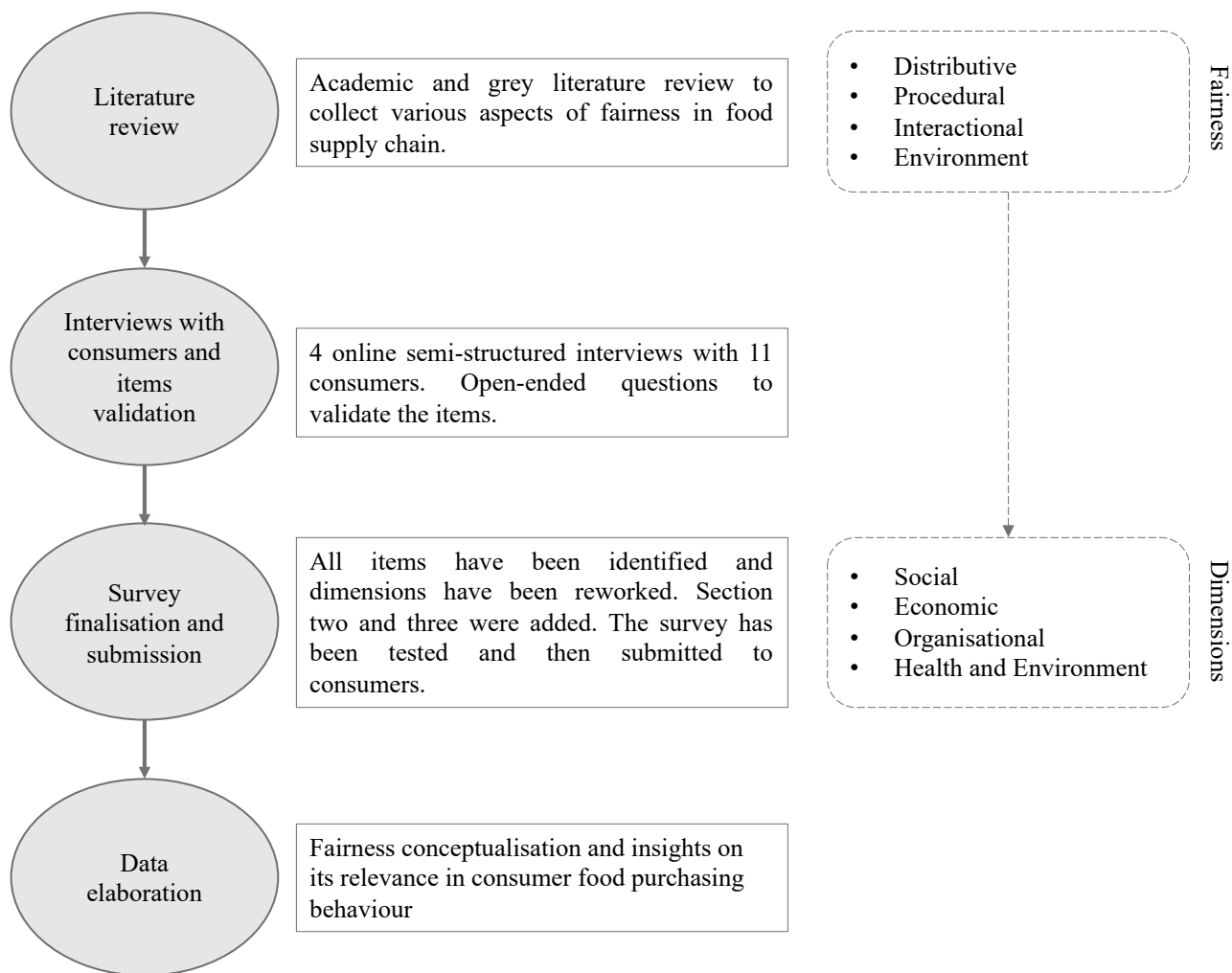


Figure 2 Methodological framework of the research

Table 1 Sources of questionnaire items

Items	References
<i>Social dimension</i>	
Guarantee no discrimination	(Fairtrade, n.d.; Food Ethics Council, 2020)
Avoid agro-mafia	(Fairtrade, n.d.)
Avoid child labour	(FAO, 2022; Cho et al., 2019; Fairtrade, n.d.)
Guarantee training opportunities to workers	(Fairtrade, n.d.; Food Ethics Council, 2020)
Include small scale producers	(Chang & Lusk, 2009)
Provide local products	(Lord et al, 2021; Czczotko et al., 2021; Hoang, 2021; Winterstein & Habisch, 2021)

Include disadvantage people (immigrants, disabled, etc.)	(Fairtrade, n.d.; Food Ethics Council, 2020)
Promote traditional products	From Focus Group
Ensure activities that do not require excessive physical exertion and respecting normal life times	(Food Ethics Council, 2020)
<i>Economic dimension</i>	
Charge the same price for organic and conventional product	From Focus Group
Guarantee producers a remuneration that covers production costs	(Fairtrade, n.d.; Food Ethics Council, 2020; Gielissen & Graafland, 2009)
Ensure good value for money	(Nguyen & Klaus, 2013)
Invest in supply chain innovation projects	(Fairtrade, n.d.)
Invest in projects in the community's interest	(Fairtrade, n.d.)
Guarantee producers stronger relationships with buyers	(Fairtrade, n.d.)
Make consumers pay a higher price in order to ensure fair pay for the actors in the chain	(Jeong et al., 2021, Busch & Spiller, 2016; Gielissen & Graafland, 2009)
Make food retailers ensure farmers receive a fair price for their agricultural products	(Busch & Spiller, 2016; Gielissen & Graafland, 2009)
Make food processors ensure farmers receive a fair price for their agricultural products	(Busch & Spiller, 2016; Gielissen & Graafland, 2009)
Make policies promote an information campaign for farmers to receive a fair price	(Busch & Spiller, 2016; Gielissen & Graafland, 2009)
Make policies ensure farmers receive a fair price for their agricultural products	(Busch & Spiller, 2016)
Have a low price for consumers	(Nguyen & Klaus, 2013)
<i>Organizational dimension</i>	
Indicate the origin of the ingredients	(Food Ethics Council, 2020; Aprile, Caputo, & Nayga, 2012)
Highlight the expiration date of the products	(Food Ethics Council, 2020)
Indicate the cultivation and breeding methods	(Food Ethics Council, 2020)
Use labels, standards and certifications	(Verma et al., 2022; Brenton, 2018; Nguyen &

	Klaus, 2013; Zepeda, Sirieix, Pizarro, Corderre, & Rodier, 2013; Aprile, Caputo, & Nayga, 2012)
Sell tasty products	From Focus Group
Indicate price distribution information on labels	(Food Ethics Council, 2020)
Have a discount for consumers	(Nguyen & Klaus, 2013)
Ensure no waste	(Fairtrade, n.d.; FAO, 2021)
Promote "pick-your-own" option	(Hoang, 2021; Sacchi, 2018)
Promote on farm selling	(Hoang, 2021; Sacchi, 2018)
Promote farmers market	(Hoang, 2021; Sacchi, 2018)
Strengthen the direct relationship with producers	(Hoang, 2021; Sacchi, 2018)
<i>Health and Environment dimension</i>	
Guarantee a natural product, with no modification of colour, shape or appearance for commercial purposes	(Czeczotko et al., 2021; Fairtrade, n.d.; FAO, 2021; Food Ethics Council, 2020; Korzen et al., 2011; Rozin et al., 2004)
Promote easier access to nutritious food avoiding junk food	(FAO, 2021; Food Ethics Council, 2020)
Guarantee healthy food (hormones free, antibiotics free, etc)	(Czeczotko et al., 2021; Fairtrade, n.d.; FAO, 2021; Food Ethics Council, 2020; Konuk 2017, Korzen et al., 2011, Shaw et at., 2005, Rozin et al., 2004)
Guarantee animal welfare	(Beck & Ladwig, 2021; FAO, 2021; Reis et al., 2021; Food Ethics Council, 2020; Höglund, 2020; Grumett, 2019; Nawroth et al., 2019; Swaffield et al., 2019)
Be vegan	(Beck & Ladwig, 2021; Alvaro, 2017)
Be organic	(Shaw et at., 2005, Chang & Lusk, 2009; Aprile, Caputo, & Nayga, 2012, Bartels & Onwezen, 2014, Konuk 2017, Czeczotko et al., 2021; Winterstein & Habisch, 2021)
Include Fair Trade products	(Nguyen & Klaus, 2013)
Guarantee soil protection	(Czeczotko et al., 2021; de Olde & Valentinov, 2019; Fairtrade, n.d.; FAO, 2021; Peano et al., 2019; Zimmerer et al., 2019)

Guarantee sustainable packaging	(FAO, 2021)
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2.2 Survey structure

The survey includes three main sections. The first section includes a list of 42 items to explore consumers' perception of fairness in the food sector. The items that share the same theme were grouped together into factors. Consumers were asked to provide their rating for each item with a 7-point Likert scale (from 1 = strongly disagree, to 7 = strongly agree). In the second section consumers were presented with 13 food attributes related to environment, economic or product characteristics (Table 2). They were asked to rate (from 1=not at all important, to 7=extremely important) according to what extent they take those characteristics into account when buying food. The objective is to understand to what extent ethical aspects are among the purchasing drivers. The third section is about consumers' socio-demographic information (age, gender, nationality and members of family working in the food system).

Table 2 Sources of food attributes

Food Attributes	References
Habits	Tao et al., 2022; Pappalardo et al., 2020
Seasonality	Wang, D., 2023
Promotion/Offer	Grover, R. and Srinivasan, V. 2018
Nutritional/health label	Lin, H-C 2021
Taste	De Pelsmaeker et al., 2017
Vegan/vegetarian	Derbyshire, 2017
Packaging	Arraztio-Cordoba, 2022
Local product	Ozretic-Dosen et al., 2007
Brand	Lin Y et al., 2022; Ozretic-Dosen et al., 2007
Fair price for farmers	Bissinger, K. and Leufkens, D. 2017
Lack of time	Tao et al., 2022; Pappalardo et al., 2020
Environmental sustainability (e.g. organic)	Chen, X et al., 2022
Money for value	Nguyen & Klaus, 2013

2.3 Data Collection of the survey

The survey was distributed between March and July 2021. To increase the number of responses, the questionnaire has been distributed through various channels, such as a local agro-food companies, agro-food networking association and different online platforms such as Instagram, Facebook, and WhatsApp. Research team sent reminders during the following two weeks to maximize survey responses. The data collection ended when researchers observed that the survey promotion campaign was progressively yielding a lower number of responses. All of the respondents were provided with a participant information sheet signed an online consent form detailing their rights. By denying the consent forms, the questionnaire ended automatically. Moreover, participants' anonymity was guaranteed as no personal data were required.

2.4 Sample

The survey was filled in by 626 consumers. Data cleaning, which included questionnaires that were at least 80% completed, yielded a final convenience sample of 529 questionnaires used for data analysis. The sample included mostly women (73%), and respondents had an average age of 34 years old, were Italian (98%), had 3 family members on average. More than 80% of them have no members working in the agri-food sector (Table 3).

Table 3 Socio demographic characteristic of the sample

Gender	Sample (%)
Male	25.9
Female	73.3
Other*	0.8
Total	100
<i>Nationality</i>	
Italian	98
Other*	2
Total	100
<i>Age</i>	
18-24	25.9
25-34	41.0
35-44	12.9

Over 45	20.0
Other*	0.2
Total	100
<i>Family members</i>	
1	10.2
2	25.7
3	19.1
4	31.9
5	10.2
6	1.3
7	0.2
8	0.2
Other*	1.1
Total	100
<i>Member working in agri-food sector</i>	
Yes	18.1
No	81.5
Other*	0.4
Total	100

*It includes blank answers

2.5 Data Analysis

Data elaborations were performed with the support of the software SPSS (IBM, version 27, Armonk, NY, USA). Data analysis followed three steps. The first step aims at understanding the perception of fairness in the agro-food chain. The first set of forty-two items of the questionnaire on the consumers' perception of fairness in food chain was processed using the Exploratory Factor Analysis (EFA) (Table 4). Principal Components Analysis (PCA) was used as an extraction method. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) value was 0.880 therefore, above the required level of 0.6 (Tabachnick & Fidell, 2013); and the Barlett's Test of Sphericity value was significant, $p < 0.001$. A Varimax rotation was performed to clarify and simplify the results of factor analysis. Items with factor loadings below 0.5 were excluded. The EFA grouped twenty-two items into five multi-items components (identified cumulated variance ~57%). Considering the number of missing values in the variables included in the factor analysis,

the pairwise method was adopted. The pairwise method occurs when the statistical procedure uses cases that contain some missing data. The choice of factors was made on the basis of the Eigenvalue criterion being higher than 1. The factors were saved as new variables by calculating their mean value. The reliability of each factor was checked with Cronbach's Alpha (CA) coefficients and considered acceptable (Bassioni 2007; Ponterotto 2007; Wachter 2012, Amonarriz 2016; Taber 2016).

In the last phase, data analysis aimed at understanding if consumers' socio-demographic characteristics and fairness perception influence consumers' perceived importance of food with fairness-related characteristic. The "fair price for farmers" attribute was cross-analysed using ANOVA test with socio-economic characteristics and fairness factors previously identified by the EFA. Those variables that revealed statistical significance after ANOVA were further analysed to see if consumers' socio-economic characteristics and perception of fairness played a role in influencing consumers' perceived importance of fairness attributes. Factor mean values were dichotomized as above versus below 4 within the 7-point Likert scale to assess how the perceived importance of fairness attributes of products changes among those with a high and low perception of the concept of fairness as 'short supply chain' and 'fair price'.

3. Results

3.1 Consumer perception of fairness in agro-food chain

The research identified the fairness-related aspects and then sought to understand which and to what extent these aspects influence perceived importance of fair attributes of food products. Results identified five factors defining consumers' perception of fairness (Table 4):

- Fair Price: This construct focuses on chain players' responsibility in ensuring that all actors, in particular farmers, receive a fair price. Farmers' fair price can be ensured thanks to processors' and retailers' contributions.

- Environment: This construct combines items with an environmental background. Cultivation and breeding methods, animals and soil treatment, packaging, and health in terms of natural products (hormones and antibiotics-free, with no modifications), are key aspects of this factor.

- Networking: This factor emphasises the importance of the network between all actors in the chain actors, from farmers to consumers. Buying local products implies tightening the relationship with the farmers.

- Short chain: This factor underlines the importance of the connection between consumer and producer. Thus, short-chain channel is a specific dimension when addressing agro-food chain fairness.

- Working condition: This factor merges items of the quality of labour force working conditions. Workers, at all levels of the chain, should be treated without discrimination of any kind and receive training appropriate to their task. This would ensure a fair working condition.

Table 4 Results of Exploratory factor analysis

Items	Factors				
	Environment	Networking	Short chain	Fair price	Working condition
Indicate the cultivation and breeding methods	0.539				
Guarantee a natural product, with no modification of colour, shape or appearance for commercial purposes	0.521				
Guarantee healthy food	0.680				
Guarantee animal welfare	0.672				
Be organic	0.517				
Guarantee soil protection	0.748				
Guarantee sustainable packaging	0.696				
Provide local products		0.509			
Ensure good value for money		0.553			
Invest in supply chain innovation projects		0.671			
Guarantee producers' stronger relationships with buyers		0.576			
Promote "pick-your-own" option			0.556		
Promote on farm selling			0.794		
Promote farmers market			0.814		
Strengthen the direct relationship with producers			0.713		
Make consumers pay a higher price to ensure fair pay for the actors in the chain				0.800	
Make food retailers ensure farmers receive a fair price for their agricultural products				0.886	
Make food processors ensure farmers receive a fair price for their agricultural products				0.822	
Include disadvantage people					0.518
Ensure activities that do not require excessive physical exertion and respecting normal lifetimes					0.625
Guarantee no discrimination					0.629
Guarantee training opportunities to workers					0.526
Cronbach's Alpha	0.795	0.617	0.769	0.816	0.651
Mean Values of Factors	6.2	5.5	5.2	6.4	5.9
Std. Dev.	0.8	1.0	1.2	1.0	1.0

The factors' mean values provide insights on the consumers' fairness perception along the agro-food chain. The most relevant factors are "Fair price" (mean 6.4; SD 1.0) and "Environment" (mean 6.2; SD 0.8). Ensuring producers receive a fair price for their products is the most important aspect for consumers when it comes to ethics in agro-food chains. Soil protection is of prime importance to consumers who prefer a natural product with no modification of colour, shape or appearance for commercial purposes. Then, with decreasing importance, "Working condition" (mean 5.9; SD 1.0), "Networking" (mean 5.5; SD 1.0), and "Short chain" (mean 5.2; SD 1.2) contribute to the conceptualisation of a fair agro-food chain.

3.2 Consumers' perceived importance of different food attributes

This section provides the results on the importance of product attributes when consumers are effectively purchasing food. The most important attribute is the taste (mean 6.0; SD 1.1), followed by the seasonality (mean 5.8; SD 1.3), the origin of the product (mean 5.6; SD 1.4), the sustainability in terms of environment (mean 5.4; SD 1.6), the value for money (mean 5.2; SD 1.5), fair price for farmers (mean 4.9; SD 1.8), habits (mean 4.7; SD 1.5), promotion or offers (mean 4.4; SD 1.6), packaging (mean 4.4; SD 1.8), and vegan or vegetarian (mean 4.0; SD 2.1). Product nutritional or health label, the lack of time to groceries, and brand are the least important in the choice of food products (mean 3.8, 3.4, and 3.3 respectively; SD 1.9, 1.8, 1.7 respectively). Standard deviation values support there is consistent consumers' perception of the relevance of taste and seasonality, but less for vegetarian or vegan attributes. Results support that environmental sustainability is more important to consumers than farmers' receiving a fair price for their products.

3.3 Consumers' socio-demographic characteristics and perception of fairness concept

Results maintain that consumers' socio-demographic characteristics and fairness perception moderately impact on the consumers perceived importance of fair attributes. "Short Chain" and "Fair price" are the dimensions of fairness most affecting perception of importance of fair characteristics. The key socio-demographic factor influencing perceived importance of fair attributes is age. Results support that older consumers tend to value fairness more than younger consumers. Moreover, consumers with higher fairness perception as "short chain" and "fair price" consider a fair price for farmers to be more important when buying products (Table 5).

Table 5 Influence of socio-demographic characteristics and perceptions of fairness on perceived importance of 'fair price for farmers' attribute.

		Mean	Std. deviation	Std. error	F	Sig.
Age	≤34	4.7	1.9	0.100	15.083	<0.001***
	>34	5.3	1.5	0.116		
Gender	F	4,9	1,8	0.092	0.050	0.951
	M	4,8	1,8	0.155		
Family member working in the agro-food sector	Yes	4,8	1,9	0.190	0.437	0.509
	No	4,9	1,8	0.087		
Short Chain	≤low	4.3	1.8	0.169	2.227	0.001***
	>high	5.1	1.7	0.087		
Fair price	≤low	3.6	1.7	0.316	1.973	0.018**
	>high	5.0	1.8	0.080		
Environment	≤low	3,6	0,5	0.037	1.032	0.421
	>high	4.9	0,5	0.024		
Networking	≤low	3,6	0,4	0.072	1.477	0.08
	>high	5,5	0,7	0.031		
Working condition	≤low	3,7	0,5	0.031	1.730	0.21
	>high	4,8	0,4	0.022		

Note: “Short chain” and “Fair price” were dichotomized based on mean value of a 7-point Likert scale. Answers below or equal to 4 were included in *low* level of agreement. Answers above 4 were included in *high* level of agreement.

, * Significant at $p < 0.05$; $p < 0.01$. Socio-demographics were dichotomized as follows: Gender: F versus M; Age: Below and equal versus above average age (34 years); Members working in the agro-food sector: YES vs NO.

4. Discussion

This study aimed to conceptualise a fair agro-food chain from consumers’ perspective by analysing their comprehension and perception of the concept of fairness and to understand whether and to what extent fairness influences the perceived importance of certain food attributes when buying food. The novelty of the topic makes fairness an interesting area for researchers. It also makes this study pioneering and innovative within the academic literature panorama.

The main contribution of this study is the finalisation of a comprehensive framework of the concept of fairness providing results valuable in marketing and management research. In fact, while past studies have often analysed the concept of fairness from a general perspective or from the consumers' point of view but often only with regard to the producers' remuneration (Andrés-Martínez et al., 2013; Bolton et al., 2003; Briggeman & Lusk, 2011; Gielissen & Graafland, 2009; Xia et al., 2004). This study is the first to present an in-depth analysis of the concept of fairness from the consumers' perspective on the entire agro-food chain. The study goes beyond existent literature that interprets fairness as identified as distributive fairness (Adams, 1965; Bolton et al., 2003; Briggeman & Lusk, 2011; Gielissen & Graafland, 2009; Haitao Cui et al., 2007; Lu et al., 2021; Zitzmann & Dobhan, 2010), procedural fairness (Thibaut & Walker, 1978),

interactional fairness (Colquitt et al., 2001; Bies & Moag, 1986) and environmental fairness (Food Ethics Council, 2020). The study reshapes fairness into five dimensions: Fair price, Environment, Working condition, Networking, and Short chain. Results confirm past literature findings in supporting that fairness is a multidimensional concept, but valuing another key actor perspective and providing consumers' interpretation of fairness. While fair price, environment, and working conditions were already included in the previous framework, short supply chain and networking are two new dimensions of fairness. It is known in the literature that short supply chains are positively perceived by consumers who consider them more environmentally sustainable, less polluted due to shorter distances, and more economically sustainable, as producers set the price (Giampietri et al., 2018). However, short supply chain as a dimension of fairness is a new and unexplored result. Similarly, the networking dimension focuses on connections between supply chain actors, demonstrating a positive effect of communication and exchange between stakeholders.

Identifying consumer perception of what a fair product should be, may help companies to better align with consumer demands. This would benefit not only the companies themselves, increasing their market by reaching more consumers but also the agri-food system, making it increasingly ethical and sustainable. In fact, each aspect that influences consumers' preferences, choices and intentions toward fair product purchase, leads to the development of a more ethical agro-food system.

Results on consumers' perceived importance of various food attributes show that the most considered attribute when purchasing is taste. The second and third most important key attributes are seasonality and origin. These findings confirm past studies' results (van der Lans et al., 2001; de Pelsmaker et al., 2017; Meyerding et al. 2019). Moreover, fair price for farmers is less important than environmental attributes. This result both confirms and contradicts previous studies. Some studies found that consumers are willing to pay a higher price for fair trade products than for organic products (Didier & Lucie, 2008; Loureiro & Lotade, 2005; Rousseau, 2015). Li & Kallas, (2021) argue the willingness to pay for environmentally sustainable products is higher than for economic or social attributes. This research shows that consumers have a well-defined idea of what ethical means, but it also shows that their choices are motivated more by opportunistic reasons, such as taste, rather than altruism and concern for the environment or workers' remuneration (de Pelsmaker et al., 2017; Poelmans and Rousseau 2016).

Finally, the research results also highlight if consumers' perception of the concept of fairness influences the importance attributed to fair characteristics of food products and consequently their behaviour. The research results support that consumers with a higher sensitivity towards fair price and short chain considered fair price for farmers more important when buying

products. Moreover, it explores the influence of consumers' socio-demographic characteristics because limitedly explored in past research (Long & Murray, 2013). Age influences the fairness orientation of consumers' food purchasing behaviour partially contradicting Morrel and Jayawardhena (2010), who claim that age is not a discriminating factor when purchasing fair trade products. Younger consumers' lower purchasing power may impact their purchasing choices favouring the purchase of promotion and discount products over certified or ethical products. In addition, consumers' conceptualisation of fairness positively affects purchasing habits toward fair products. Increased awareness of short chains and fair price concepts can positively impact food purchasing behaviour, leading to fairer choices (Pedregal & Ozcaglar-Toulouse, 2011).

Consumers have a holistic vision of fairness. They are aware that a fair agro-food chain should be based on principles of respect for all chain actors and the planet. However, it is also clear that taste is the primary driver of consumption, to the detriment of more ethical attributes such as a fair price for consumers.

The results of this research are useful for policy makers as they provide interesting insights for future decisions. It is undeniable that consumers play an increasingly crucial role in shaping the market, and they influence companies' management practices and food offers. Understanding consumers' preferences and attitudes towards fairness in the agro-food chain allows to promote fairness and sustainability in the agro-food system, and to satisfy a broader number of consumers by creating products that better reflect their needs. For this reason, policies and organisations should consider that to promote fairness such as the fair price for farmers and to care for the environment and good workers' conditions, they should ensure a basket of tangible and intangible food product attributes appreciated by consumers. Given consumers' interest in closer connection with producers, strengthening local identity and community building, policies should favour the development of short supply chains, which not only have an effect on environmental sustainability by reducing transport and intermediaries but also guarantee producers the price they consider fair. These results contribute to the understanding of the market, fostering a system in line with the objectives proposed by the international institution regarding payments, workers' treatment, working conditions and environmental protection.

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CHAPTER 3

Original Research

Consumer perspective of fairness in the agro-food chain: Scale development and validation

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Abstract: Consumers' purchasing and consumption behaviour is no longer driven solely by intrinsic product characteristics, but also by who benefits from their choices. However, the potential role of consumers in creating a fair food system has been underestimated for a long time. This paper details the development and validation of a new research instrument able to predict consumers' willingness to purchase, commitment, and emotional experience during consumption and purchasing behaviour of fair products. The scale provides a multidimensional conceptualization that encompasses key attributes of the construct. Developed and extensively tested among consumers both in the UK and Italy, the scale demonstrates reliability, validity, and metric measurement invariance across these diverse nations. By deepening the comprehension of consumers' diand predicting consumer behaviour, our scale could be a valuable tool for the development of a fair and sustainable agri-food system.

Keywords: Fairness, Ethics, Agro-food chain, Consumer, Scale development

1. Introduction

The concept of fairness takes its origin back to antiquity, but only recently it has emerged in the context of agro-food chains. Driven by recent events related to producer remuneration (Busch & Spiller, 2016), such as farmers' or milk producers' strikes, fairness has become a significant topic of interest for academics and businesses, organisations and policymakers (Busch & Spiller, 2016; Samoggia, Grillini & Del Prete 2021; European Commission, 2019).

Consumers' decisions are no longer based exclusively on the characteristics of products but on who benefits from their purchases (Briggeman & Lusk, 2011). Ethical consumer behaviour, which includes consideration of environmental and social concerns, is highly increasing (Fairtrade International, 2020). Driven by a shared desire for solidarity and the protection of the environment, the consumption of fair products has become an increasing common trend among consumers (FOOD navigator, 2021; BBC, 2021; Carolan, 2021; Degli Esposti, 2021). Studies on fair business practices along the food chains also growing (Chow and Chen, 2012). It was only in the 1990s that research began to focus more on fairness from the consumer's point of view rather than the company's point of view (Schlegelmilch and Öberseder, 2010). However, measurement scales of consumers' ethical purchases are rare (Sudbury-Riley & Kohlbacher 2016), especially with regard to consumers' interest in agro-food chain fairness. There is little research on consumers' attitude and behaviour towards fair agro-food chains. In particular, previous studies have not investigated fairness in all its dimensions, but have focused on single dimensions that only partially describe fairness multidimensionality. Even when ethical research does focus on consumers, it tends to emphasize environmental or price issues rather than incorporating broader number of issues (Sudbury-Riley & Kohlbacher 2016). Consequently, despite the fact that ethical consumers are no longer classified as a marginalised group (Carrington et al., 2014), it is unusual to find reliable and validated scales capturing consumers' interest in fairness that encompass all fairness dimensions. There are a number of indicators in the literature that measure consumer interest in certain aspects related to fairness, but none of these indicators include a comprehensive view of the concept of fairness. These tools measure interest, perceptions, willingness to buy, and beliefs about issues such as fair trade or the environment (De Pelsmacker & Janssens, 2007; Shih-Tse & Chen, 2019; Botonaki & Mattas, 2010; Kilbourne & Pickett, 2008; Alzubaidi et al., 2021; Toti et al., 2021). One study developed a scale to measure and conceptualise ethical minded consumer behaviour (EMCB) (Sudbury-Riley & Kohlbacher, 2016). However, the study focused heavily on environmental and corporate social responsibility and measures only some aspects of fairness. Other studies have focused on consumers' motivations to purchase sustainable, environmentally friendly (Alzubaidi &

Dwivedi, 2021), ethical (Toti, Diallo, & Huaman-Ramirez, 2021) or fair trade products (De Pelsmacker & Janssens, 2007; Shih-Tse & Chen, 2019).

Despite considerable attention, the marketing literature lacks systematic examination of the fairness from the individual-differences perspective. This omission is significant, as individual disposition towards fairness may potentially be related to a variety of marketing outcomes such as organisation attitudes or behaviour. A major obstacle impeding our understanding of fairness in agro-food chains from the individual-differences perspective has been the absence of a valid and reliable measurement of the construct. Therefore, by addressing these limitations our study aims to make two major contributions. First, we contribute to advancing the literature by offering an individual-differences perspective to understanding fairness in the agro-food chain settings. The individual-differences perspective helps explain why some individuals are more likely than others to put emphasis on the extent to which agro-food chains are fair during their consumption. By doing so we provide a multidimensional conceptualization that encompasses key attributes of the construct. Second, by grounding the items in the theoretical underpinnings of the fairness literature we offer a reliable, valid and invariant multidimensional measurement of the individual disposition toward fairness in agro-food chains across two countries – Italy and the United Kingdom (U.K.). The proposed four-dimensional second-order structure of disposition toward fairness measurement (FRN) provides a necessary and critical tool to advance a more comprehensive and balanced perspective on the nomological network of the construct. Indeed, our findings corroborate the contribution of fairness disposition in predicting consumers' commitment, willingness to purchase, and emotional experience during consumption. The measurement would allow scholars to reliably extend research in this area. The development of the FRN represents an important contribution to the management as it allows for better respond to consumers' wants and needs. In this way, consumers could reach a wider segment of the market, thus expanding ethical consumption. Our scale could be a valuable tool for the development of a fair and sustainable agro-food system.

The remainder of the article is structured as follows. Firstly, we review the literature on fairness in agro-food chain and present a description of various dimensions of the concept. Then, following contemporary stages of scale development (deVellis, 2003) we develop and validate four-dimensional second-order measurement using subject-matter experts and three independent samples of consumers in Italy and the U.K. As part of the process, we detail how we generated and reduced the initial pool of items and assessed the psychometric properties (i.e., factor structure, measurement, invariance, reliability, convergent, discriminant validity) and nomological network of the measurement. Finally, we discuss the theoretical and managerial implications of our measurement.

2 Background

2.1 Multidimensionality of fairness

The concept of fairness (FRN) is multifaceted, multidimensional, and changeable, depending on the point of view (Busch & Spiller, 2016). Often addressed as justice, equity, or ethic, fairness in the agro-food chain is conceptualised as a multidimensional construct where dimensions are integrated (Brown et al. 2005; Gudbrandsdottir I. Y. et al., 2021). Despite the fact that there is no unique definition of the concept of fairness, it can generally be interpreted as people's aversion to inequity (Fehr and Schmidt;1999). Within the context of agri-food supply chains, it thus concerns normative judgments regarding the outcomes and distribution of benefits, the rights of, and constraints on, actors within the supply chain, and actors' duties and obligations to others including the environment (Griffith et al. 2006; Gu and Wang 2011; Kashyap and Sivadas 2012; Busch and Spiller 2016; FEC 2020). This broad and comprehensive interpretation of fairness allowed an initial conceptualisation of the concept of fairness from which the items for the development of the scale were then extracted.

Despite being a much-debated topic, it is still difficult to define fairness, even more so to create an instrument that can measure it. There are studies in the literature that have examined similar or related aspects of the concept of fairness (Alzubaidi et al., 2021; De Pelsmacker & Janssens, 2007; Kilbourne & Pickett, 2008; Shih-Tse Wang & Chen, 2019; Toti et al., 2021). Almost none of these have developed and validated a scale. Many of these have often included only part of the concept of fairness, analysing consumers' interest, trust, or scepticism towards specific aspects of fairness (De Pelsmacker & Janssens, 2007; Kilbourne & Pickett, 2008; Shih-Tse Wang & Chen, 2019). Since there was no validated measurement scale before the present study, the research will mention studies that created a set of indicators that come close to the concept of fairness.

In the context of the agro-food chain, fairness is often interpreted as fair price, received or paid, as fair treatment, in terms of respect and honesty in communications, and as respect towards the environment. This section has the major purpose to conceptualise potential dimensions of fairness and to describe consumers' disposition toward fairness in the agro-food chain. In particular, fairness is characterised as a four dimensions construct consisting of environmental, economic, social, and informational components.

2.1.1 Environmental fairness

In 2020, the Food Ethics Council included the environment in its Framework (FEC, 2020) and answered the question: fair for whom?. They support that when making decisions, it is the moral responsibility of every actor in the chain to adopt a fair approach in their decision, not only to people or other actors but also to the environment. In food systems, the term sustainability and environment are often used as synonyms (FEC, 2020). All environmentally sound practices can be considered essential to achieving a fair agro-food chain.

As mentioned earlier, consumers are often interested in the environmental sustainability of the products they buy. In fact, there are various scales regarding environmental issues related to consumers. Kilbourne & Pickett (2008) created a scale that measures environmental beliefs, concerns, and behaviours. Alzubaidi et al. (2021) focus on consumers' environmental concern and perceived consumer effectiveness examining antecedents of consumers' pro-environmental behaviour. Toti et al. (2021) examine the role of ethical sensitivity on ethical consumption behaviour including a section on topics such as organic, climate change or consumer interest in eco-labelled products. Sudbury-Riley & Kohlbacher (2016) are the only ones to develop and validate an ethically minded consumer behaviour (EMCB) scale which encompasses issues like sustainable and reusable and recycled packaging. However, none of the mentioned studies address in-depth specific environmental aspects but only environmental issue in general.

From a consumer perspective, one of the most studied environmental issues is packaging which is highly relevant to buying decisions (Armstrong 2007; Ali 2010; Vieira 2015). Consumer's interest in sustainable packaging has increased in recent years (Martinho et al., 2015; Afif et al., 2021). Packaging is one of the main drivers of purchasing behaviour (Mancuso et al., 2021) and is increasingly associated with pack waste production (Afif et al. 2021). Among the most complex challenges so far is water scarcity, which the whole world is fighting against. Consumers seem to be sensitive to the issue and are influenced by labels that indicate a water-conscious product (Savchenko et al., 2018; Allison et al., 2021). The importance of issues like water or waste management is not only highlighted by consumers but also strongly discussed by major organisations such as the FAO or Fairtrade International. In addition, the literature often mentions the importance of biodiversity conservation labels for consumers (Gatti, et al., 2022). Reducing the use of pesticides and agrochemicals to a minimum in order to avoid the loss of natural habitats and the risks associated with large-scale monocultures are the main proposals of the major institutions such as FAO, Fairtrade International or the Food Ethics Council, as well as of great interest to consumers.

2.1.2 Economic fairness

Price distribution analysis is the most frequent way to assess fairness along the agro-food chain. Distributive fairness has its origins in the equity theory of Adams (1965) and is based on the concept that the outcome, interpreted as the price each actor receives for its products, is perceived as fair if the ratio between inputs and outputs is balanced (Busch and Spiller, 2016; Gudbrandsdottir I. Y. et al., 2021). Price fairness is often seen from the point of view of the farmers, who are considered the weakest actor in the supply chain (Samoggia et al., 2021). However, economic fairness should be conceptualised as fair distribution among all supply chain partners, examining the fairness of the distribution of total revenues that have been allocated to each single supply chain partner (Briggeman & Lusk, 2011). Shih-Tse & Chen (2019), addressed price fairness, developing a series of indicators to analyse the consumers' perceived distributive justice of fair trade organisations on food purchase intention.

From a consumer's perspective, price fairness is about the price they pay for products (e.g. Bolton, Warlop, & Alba, 2003; Diller, 2000). From a producer's perspective, price fairness is assessed by the price farmers receive for their products (Hellberg-Bahr & Spiller, 2012). Farmers should receive a price that allows them at least to cover their production costs (FAO; n.a; Busch and Spiller 2016). Gielissen and Graafland (2009) find that price increases are perceived as fairer when they benefit poor or small actors than when they benefit rich or large actors, all other factors being equal. However, it is still unclear who is responsible in the food system for ensuring that farmers receive a fair price. Although increasing the price paid by consumers to ensure a fair price for farmers does not positively affect consumers, consumers would be willing to pay more if processors and retailers reduced their profits (Samoggia et al., 2021). The unfair distribution of prices along the supply chain is often blamed on retailers. From a consumer perspective, retailers should reduce their share (Busch & Spiller 2016). In addition, policy can contribute to shaping the price distribution along the agro-food chain by creating regulations to guarantee fair remuneration for farmers and address market failures (Woodhill et al., 2022). However, these individual measures may not have sufficient impact to change agro-food systems. Only by linking these different avenues of reform can achieve lasting effect in food systems (De Schutter 2017; FEC, 2010).

2.1.3 Social fairness

Social aspects were added to the concept of fairness when Bies and Moag (1986) described the concept of interactional fairness (Gudbrandsdottir I. Y. et al., 2021) which support that the intentions behind an action influence perception of fairness (Rabin M., 1993). This concept emphasises the importance of the quality of people's treatment in the application of procedures. Greenberg (1990) expanded the interactional concept including a sub-dimension called

interpersonal fairness. Treating people with dignity, honesty, politeness, and respect are the main aspects of interpersonal fairness.

Human rights underpin the basic principles of a fair agro-food system. Human rights, including decent work and gender equality, represent the guiding principles of FAO's programmes (FAO, n.a.). The Fairtrade International organisation, such as The Food Ethics Council, shares the same values and emphasises the importance of working conditions, safety and treatment of workers (Fairtrade International, n.d.).

Social oriented characteristics of products can influence the disposition to buy a food product (Auger et al., 2008). There are many studies describing consumer interest in Fair Trade certification in general (Burgin 2021; De Pelsmacker & Janssens; 2007; Shih-Tse & Chen, 2019). Toti et al. 2021 addressed the topic of child labour and employee rights. Sudbury-Riley & Kohlbacher (2016) included items in their EMCB scale that focus on the influence of food companies' social responsibility in ensuring safe working conditions and avoiding labour exploitation on consumers' purchasing behaviour.

2.1.4 Informational fairness

Within the concept of interactional fairness, Greenberg (1990) has described a second sub-dimension of fairness, namely informational fairness. It concerns communication, or more precisely, the quality and quantity of information shared with consumers or between actors in the chain. Informational fairness focuses on the quality of the information provided on why procedures were applied in a certain way or why outcomes were distributed in a certain way. Colquitt et al., 2001 state that informational fairness describes explanations given for decisions. De Pelsmacker & Janssens (2007) developed a model for fair trade buying behaviour investigating, among others, the overall perception of the quality and quantity of information about fair trade issues.

Consumers are often uncertain facing unclear or non-transparent labels (Richartz & Abdulai 2022; FEC 2020). Describing the nature of the relationship between farmers and processors or indicating how the price is distributed along the agro-food chain could have an impact on consumer choice.

2.2. Multidimensionality and second-order structure

We envisioned fairness is a superordinate (second-order), multidimensional construct. This specification is warranted because the hypothesised dimensions are different manifestations of the same underlying construct of fairness which represents the commonality among the dimensions

(Edwards, 2001, Law, et al., 1998). Therefore, the FRN construct cannot be conceived separately from its specific dimensions. In other words, we construe the second-order latent factor as capturing fairness disposition as a [highly] deeply abstract and embedded representation of overall fairness disposition arising from and displayed toward a company, whereas dimensions constitute less abstract, specific components of fairness disposition in the form of social, economic, environmental and organisational dimensions. Furthermore, specifying the construct of fairness as second-order allows us to conduct analyses at the construct level since we aimed to draw conclusions about the overall multidimensional construct instead of its individual dimensions (Wong, Law, and Huang, 2008, Edwards, 2001).

3. Study 1: content validity and latent structure

The objectives of this study were to (1) generate a set of items that would constitute the concept of fairness in agro-food chain (2) examine the face validity of the initial set of items, (3) examine the factorial composition of the generated items using exploratory structural equation modeling (ESEM), (3) retain a parsimonious set of items and (4) conduct an initial psychometric assessment of the retained items.

3.1. Item generation and content validation

Following recommendations from previous scale development research (DeVellis, 2003), we generated a broad set of items to capture the potential aspects of fairness in agro-food chains based on a comprehensive literature review on fairness along the agro-food chain. Based on the preceding discussion about fairness definition, we included topics related to the concept of sustainability, that fall under the guidelines of major institutions working for justice in the agro-food chains, or academic literature that explores consumer interest in products that ensure fairness in food supply chains. On the basis of this extensive literature review, we identified an initial pool of 42 items which encompassed all potential aspects of fairness in agro-food chain, including broader aspects such as ethics, justice, and sustainability.

Next, we solicited content validity ratings on this pool of items from twelve subject matter experts. We included academics and experts within fairness-related organizations, both from Italy and the U.K. Following the procedure suggested by Zaichkowsky (1985), we provided experts with a broad definition of fairness and asked them to rate each item with respect to its relevance to the definition – “low”, “moderate” or “high”. The experts were also asked to provide additional comments on the items' ambiguity, clarity and redundancy or even possible suggestions for

additional items. We retained the items if they were rated as (i) “high” by more than 50% of the experts or (ii) “moderate” or (ii) “high” by at least 80% of the experts. Raters also provided qualitative feedback about any items’ deficiency or contamination. We reviewed all qualitative feedback for possible items revisions (DeVellis, 2003). This process resulted in a pool of 28 items.

To further increase content and face validity, we subjected the items to two sorting tasks exercises. By using the respondent level of agreement, we were able to attribute each item into a specific dimension. Based on the literature review, five initial dimensions were identified that were deemed appropriate facets of the construct: social, economic, environmental, health, and organization-informational dimensions. In the first sorting task, a sample of 27 UK participants, recruited via the online research platform Prolific. The participants read a short definition of the different dimensions of fairness and then organized the items by similarity, as they deemed appropriate. The “not belonging to any group” option was added in case some items did not fit into any dimension. Fifteen items reached more than 70% consensus on belonging to the same dimension. All items included under the health dimension did not reach the minimum consensus, for this reason the health dimension was removed. The Organisational and Informational dimension was reworded to Informational. To further increase domain and face validity, we administered a second task exercise with a different sample of 27 UK raters who were asked to assess the items that did not reach a satisfactory consensus on the first task. At the end of the process, we retained 20 items, of which 4 items measured the social dimension, 6 the economic dimension, 4 the informational dimension and 6 the environmental dimension.

Since our aim was to develop a measurement applicable in both Italy and the U.K. without restrictions to a particular culture, we also went through a translation process to avoid language issues. Following Brislin (1970), the instrument was translated into Italian and translated back to English to avoid errors that can lead to different meanings across the two countries. The translation was undertaken by two independent Italian researchers external to the study.

3.2. Participants and procedure

Following previous recommendations (e.g., Worthington & Whittaker, 2006), across this and subsequent studies we considered a sample size of 300 as necessary for accurate parameter estimations during covariance-based SEM. We collected data from adults in Italy and the U.K. using Prolific Academic. A total of 423 adults (43.50% females; 54.85% males) agreed to participate in Italy. Most participants indicated the age of 18–24 (41.13%). Followed by 25–34 (40.43%), 35–54 (15.84%) and 55–65 (2.60%) In the U.K., we recruited 321 adults (54.52% females; 43.93% males). Predominantly participants were aged 35–54 (32.71%), followed by 25–34

(24.30%), 18-24 (13.4%), 55–65 (19.94%), and those over 65 (9.66%). Participants were asked to what degree they agreed with each of 20 FRN items on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree) followed by a demographic survey.

3.3. Analysis and results

3.3.1. Assessment of the factorial structure

Prior the assessment of the factorial structure of the measurement, we computed The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy. The results showed that the data were appropriate for further analysis (Italy: KMO = .93; U.K.: KMO = .95). We first examined the number of factors using Horn's parallel analysis. In both, Italy and the U.K., results of the parallel analysis demonstrated that only the first four eigenvalues were greater than the comparison eigenvalues (using both the mean and 95th percentile criteria) generated by the parallel analysis, therefore indicating four factors should be retained (Hayton et al., 2004). We also used Hull method, which aims to find an optimal balance between the model fit and the number of parameters (Lorenzo-Seva, 2011). Using maximum likelihood as an extraction method and RMSEA as an index, Hull method supported the extraction of four factors in Italy and the U.K.

We then conducted exploratory structural equation modelling using robust maximum likelihood estimation (MLR) with oblimin rotation. ESEM incorporates the strengths of a confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) within a SEM framework (Asparouhov & Muthén, 2009). Consistent with EFA, in ESEM all indicators are permitted to load on all factors, allowing for free estimation of all cross-loadings. And consistent with CFA, ESEM provides a robust means of evaluating model adequacy (e.g., standard errors for parameter estimates and goodness-of-fit indexes). Across studies, in evaluating models' fit we used combinations of multiple goodness-of-fit indexes and a conventional evaluative criterion (e.g., Hu & Bentler, 1999): comparative fit index ($CFI \geq .90$ or $> .95$), Tucker–Lewis's index ($TLI \geq .90$ or $> .95$), root mean square error of approximation ($RMSEA \leq .08$ or $\leq .10$) and the standardized root mean squared residual ($SRMR \leq .08$).

The four-factorial exploratory model with 20 items demonstrated a good fit to the data in Italy ($\chi^2(116) = 187.91$, $CFI = .98$, $TLI = .97$, $RMSEA = .04$, $SRMR = .02$) and the U.K. ($\chi^2(116) = 187.91$, $CFI = .98$, $TLI = .97$, $RMSEA = .04$, $SRMR = .02$). Next, to retain the items that most clearly represent the underlying construct, we iterated ESEMs taking into the account the criteria for item retention. Specifically, we removed those items that (1) loaded lower than .50 on the intended factor or (2) cross-loaded on any other factor at .25 or greater (e.g., Tabachnik & Fidell,

2012). We carried the item removal process simultaneously for both groups - Italy and the U.K. In each iteration, we removed items when they met the exclusion criteria for at least one group, and we performed a new ESEM within each group every time we removed an item. In each iteration we also performed parallel analysis to ensure that the item removal did not distort the factorial structure. Through the iterative process, we excluded six items. Table 1 summarizes the results. The remaining 14 items (see Table 2 loaded significantly and substantially on their primary factors ($\lambda > .50$, p 's $< .001$) with insubstantial cross-loadings on other factors. The first factor was interpreted as social (3 items), followed by economic (4 items), informational (3 items) and environmental (4 items).

Table 1 Final items (English and Italian versions).

Dimension	Item (English; <i>Italian</i>)
<i>It is important to me that the food I buy... (Per me è importante che il cibo che acquisto...)</i>	
Social	...avoids exploitation of workers (such as unethical behaviour, criminal activities, and illegal hiring). <i>(...eviti lo sfruttamento dei lavoratori (comportamenti scorretti, attività illegali, e assunzioni illecite).)</i>
	...prevents child labour. <i>(...impedisca il lavoro minorile.)</i>
	...ensures worker safety and respects normal working hours. <i>(...garantisca ai lavoratori sicurezza e rispetto dei normali orari di lavoro.)</i>
Economic	...guarantees producers a remuneration that covers production costs. <i>(...garantisca ai produttori una remunerazione che copra i costi di produzione.)</i>
	...ensures farmers receive a fair income even if I have to pay a higher price. <i>(...assicuri che i produttori ricevano un reddito equo anche se ciò significa che io sosterrò un costo maggiore.)</i>
	...ensures farmers receive a fair price for their produce from retailers. <i>(...assicuri che gli agricoltori ricevano un giusto prezzo per i loro prodotti dai supermercati.)</i>
	...is governed by policies which ensure farmers receive a fair price for their produce <i>(...sia regolato da politiche che assicurino che gli agricoltori ricevano un giusto prezzo per la loro produzione.)</i>
Informational	...provides consumers with information about the distribution of prices between actors in the supply chain <i>(...fornisca ai consumatori informazioni riguardanti la distribuzione dei prezzi tra gli attori della filiera.)</i>
	...specifies on the label the nature of the relationship between food processors/retailers with farmers. <i>(...specifichi sull'etichetta la natura dei rapporti tra le imprese di trasformazione/distribuzione e i produttori.)</i>
	...indicates price distribution information on labels. <i>(...indichi sull'etichetta informazioni riguardo la distribuzione dei prezzi.)</i>
Environmental	...uses sustainable packaging. <i>(...usi imballaggi sostenibili.)</i>
	...ensures proper and responsible water management. <i>(...assicuri una corretta e responsabile gestione dell'acqua)</i>
	...ensures proper and responsible waste management. <i>(...assicuri una corretta e responsabile gestione dei rifiuti.)</i>

...preserves biodiversity.
(...*preservi la biodiversità.*)

Table 2. ESEM results and psychometric properties of FRN (Study 1).

Item	Italy				U.K.			
	1	2	3	4	1	2	3	4
FRN_2	.91 (.94)	.05	.00	-.01	.85 (.94)	.04	.06	.04
FRN_3	.90 (.87)	-.06	-.01	.04	.98 (.88)	-.06	-.04	.00
FRN_4	.85 (.90)	.06	.03	-.01	.72 (.92)	.20	.04	.03
FRN_5	.07	.67 (.71)	.05	-.05	.12	.51 (.77)	.23	.01
FRN_7	.04	.59 (.70)	.16	.00	.04	.67 (.85)	.08	.15
FRN_8	.01	.89 (.90)	-.04	.05	-.03	1.03 (.95)	-.04	.00
FRN_9	.01	.84 (.85)	.00	.03	.16	.75 (.95)	.08	.01
FRN_11	-.04	.07	.82 (.84)	.02	-.03	.04	.92 (.92)	-.01
FRN_12	.09	-.09	.88 (.90)	.06	-.01	.03	.88 (.93)	.06
FRN_13	-.04	.06	.83 (.81)	-.06	.05	-.06	.88(.85)	-.03
FRN_16	-.09	-.02	.02	.86 (.79)	-.02	.10	-.04	.81 (.83)
FRN_17	.05	.02	.00	.88 (.93)	.02	-.08	.00	.98 (.94)
FRN_18	.06	-.02	-.03	.92 (.93)	.01	.04	-.01	.89 (.92)
FRN_19	-.03	.11	.09	.71 (.80)	.00	.01	.05	.86 (.89)
γ	.83	.87	.57	.76	.89	.93	.69	.73
ω	.93	.87	.89	.92	.94	.93	.93	.94
AVE	.82	.61	.72	.74	.84	.77	.81	.80

Note: AVE = average variance extracted; γ =second-order factor loading.

1 = social; 2 = economic; 3 = informational; 4 = environmental.

Standardized factor loadings are reported. Standardized factor loadings from CFA are reported in parenthesis. All standardized factor loadings in bold are significant at $p < .001$.

The order of items corresponds to the items' order in Table 2.

ω and AVE are reported for the first-order latent factors.

3.3.2. Confirmatory factor analysis

We subsequently subjected the remaining 14 items to a CFA, whereby we specified the four hypothesized dimensions as first-order factors of the second-order FRN factor. Across studies, we used MLR estimation for the CFA. The model had a good fit to the data in Italy ($\chi^2 (73) = 120.24$, CFI = .98, TLI = .98, RMSEA = .04, SRMR = .04) and the U.K. ($\chi^2 (73) = 127.38$, CFI = .98, TLI = .97, RMSEA = .05, SRMR = .04). Supporting convergent validity, all items loaded significantly and substantially on their respective dimensions ($\lambda > .70$, p 's $< .001$). As demonstrated in Table 1, the coefficient omega (ω) estimated for each dimension exceeded .80, supporting dimensions' reliability. The average variance extracted (AVE) was greater than .50 for each FRN dimension (Fornell & Larcker, 1981), meaning that each first-order latent factor accounted for majority of the variance in its indicators. The second-order loadings were also significant and substantial, ranging from .57 to .87 ($M = .76$) in Italy, and from .69 to .93 in the U.K. ($M = .82$). Supporting reliability, the coefficient omega for the second-order model (ω_{L1}) was .81 and .87 in Italy and the U.K., respectively. The AVE for the second-order construct were above .50 (Italy: .57; U.K.: .67) indicating that a majority of the variance in the first-order dimensions is shared with the second-order latent construct (MacKenzie et al., 2011).

4. Study 2: Measurement validation

The objectives of this study were to (1) confirm the psychometric properties of the hypothesised second-order factorial model using new independent samples, (2) confirm measurement invariance and (3) provide evidence for construct validity. Construct validity is the extent to which a measurement assesses the construct it is deemed to measure (MacKenzie et al., 2011). We aimed to establish construct validity by examining the relationship of the construct within its nomological network. In doing so we formally tested for convergent and discriminant validity of our measurement in relation to various construct identified as related to fairness.

To assess construct validity, we started with an overview of the conceptual overlap and distinctions between the fairness construct and theoretically linked constructs. We expected that FRN would retain its uniqueness and distinctiveness (discriminant validity) but would reflect the underlying similarities with theoretically related constructs (convergent validity). In particular, building on the previous literature we expected our construct to be positively related to FT (fair trade) concern (De Pelsmacker & Janssens, 2007), purchase intention toward FT products (Shih-Tse & Chen, 2019), components of justice of FT Organisations (Shih-Tse & Chen, 2019), environmental belief (Kilbourne & Pickett, 2008), environmental concern (Kilbourne & Pickett,

2008) and ethical consumption behaviour (Toti et al. (2021)). We also expected that our focal construct would demonstrate a negative correlation with FT scepticism (De Pelsmacker & Janssens, 2007). As an additional test for discriminant validity, we included FT information quality (De Pelsmacker & Janssens, 2007) which does not share a strong theoretical link with the focal construct and hence should demonstrate weak to null correlation with it.

4.1. Participants, procedure and measurements

We recruited 334 adults in Italy using Prolific. After removing seven participants, the Italian sample consisted of 327 adults ($M_{age} = 29.94$; $SD_{age} = 8.88$; 48.01% females; 49.24% males). In the U.K., a sample of 423 participants on Prolific agreed to participate in the study. After removing five participants who failed an attention check, the final sample in the U.K. was 418 participants ($M_{age} = 36.39$, $SD_{age} = 12.03$; 72.73% females, 26.56% males). Participants responded to the FRN measurement in addition to the following measurements from the existing literature derived/or adopted for this study (see Appendix for items): FT concern, FT skepticism, information quality, purchase intention toward FT products, components of justice of FTOs, environmental belief, environmental, ethical consumption behaviour and social media self-control failure (a marker variable). Measurements were presented in a randomized order. Participants then completed a demographic survey. We developed Italian versions of these measurements using the translation and back translation procedure (Brislin, 1970).

4.2. Analysis and results

4.2.1. Confirmatory factor analysis of FRN

We first performed a CFA for each sample and tested a hypothesised second-order structure in which we modelled FRN as the second-order factor with four dimensions (social, economic, informational and environmental) as first-order factors (see Figure 1). Replicating Study 1, in both samples, the second-order factorial model exhibited a good fit to the data (Italy: $\chi^2 (73) = 76.85$, CFI = .99, TLI = .99, RMSEA = .01, SRMR = .03; U.K.: $\chi^2 (73) = 168.07$, CFI = .97, TLI = .96, RMSEA = .06, SRMR = .04), therefore, further supporting our conceptualisation that the constitutive dimensions were linked to a common second-order construct of fairness. The second-order factor loadings were statistically significant at .001 and substantive in size, ranging from .66 to .93 ($M = .86$) in Italy, and from .80 to .96 in the U.K. ($M = .91$), indicating that the first-order factors are well explained by the second-order factor. Likewise, the individual items are well

explained by their respective first-order factors, as indicated by their substantial and significant factor loadings (see Figure 1). Supporting the measurement's reliability, coefficient omega for the second-order model was well above .80 in Italy ($\omega = .87$) and the U.K. ($\omega = .92$). Furthermore, the AVE for the second-order construct was .77 and .82 in Italy and the U.K. respectively.

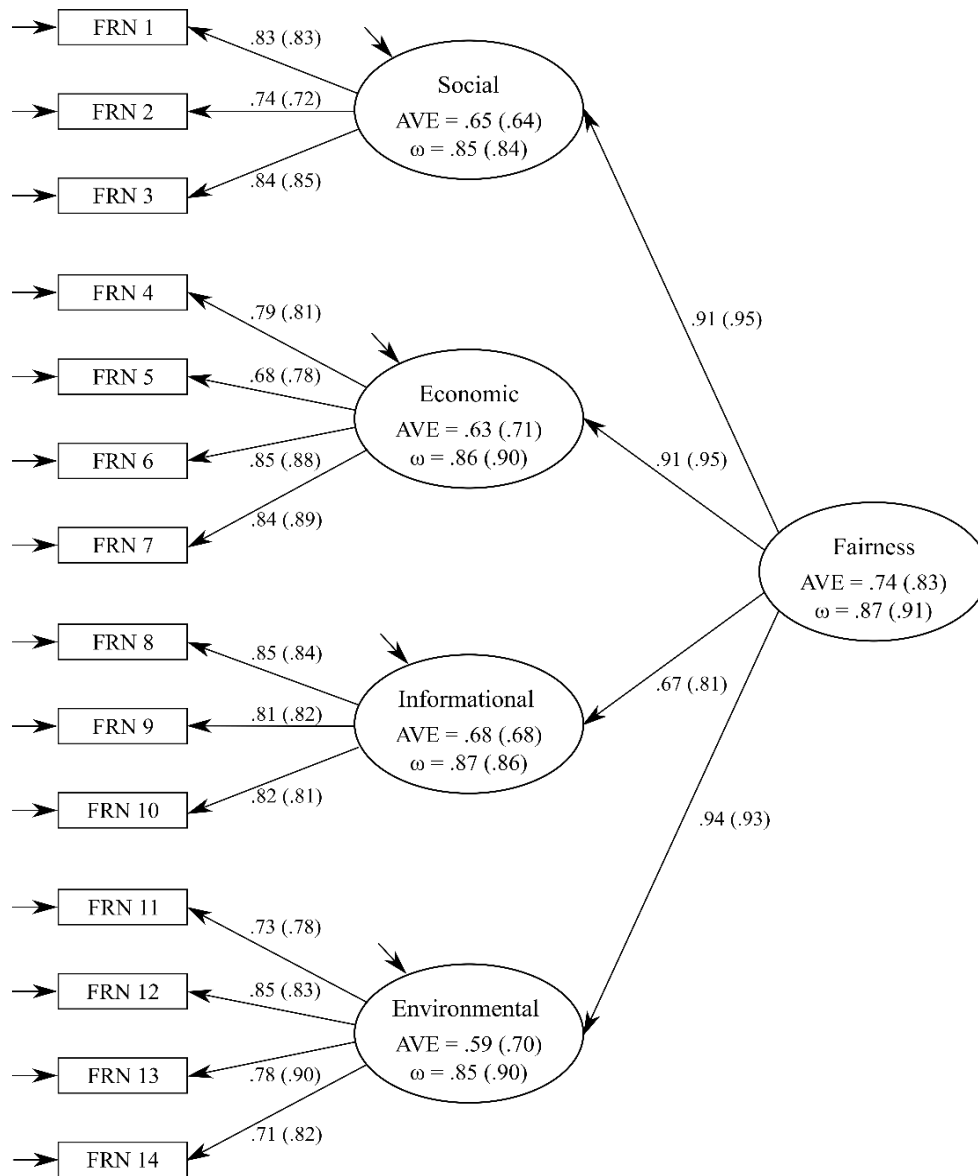


Figure 1. Graphical representation of the second-order model of the FRN. *Note:* Values without parentheses corresponds to Italy and in parentheses to the U.K. All first-order and second-order factor loadings are significant at $p < .001$.

Following the recommendation by Netemeyer et al. (2003), we tested our operationalization of fairness construct by comparing our conceptually based second-order model with an alternative unidimensional measurement model in which all 14 items were specified to load on a single latent construct. The second-order operationalisation outperformed the unidimensional model as

demonstrated by the poor model fit for the later in Italy ($\chi^2 (77) = 349.36$, CFI = .85, TLI = .83, RMSEA = .10, SRMR = .08) and in the U.K. ($\chi^2 (77) = 408.24$, CFI = .89, TLI = .87, RMSEA = .10, SRMR = .06). Likewise, the scaled difference chi-square ($\Delta\chi^2$) tests (Satorra & Bentler, 2001) supported our second-order operationalization by demonstrating that the model was significantly better than the unidimensional model in both countries (Italy: $\Delta\chi^2 (4) = 152.44$, $p < .001$; U.K.: $\Delta\chi^2 (4) = 126.22$, $p < .001$). We also tested our second-order four-dimensional operationalization against 10 alternative models in which two or three of the original dimensions were combined into a single factor. The results (see Web Appendix) indicated that the second-order four-dimensional model represented the data more appropriately than all alternative models¹.

4.2.2 Measurement invariance of FRN

Measurement invariance demonstrates whether the measurement holds the same meaning for members of different groups and is a prerequisite for any future comparison of groups with respect to a latent trait (Vandenberg & Lance, 2000). We performed measurement invariance tests across cultures (Italy vs. U.K.) and gender (males vs. females) allowing us to determine whether the same construct of fairness is being measured across these groups. We followed the procedure by Rudnev et al. (2018) in testing a series of restrictive hierarchical models using a multi-group CFA. In comparing nested models, we performed scaled difference chi-square tests (Sattora & Bentler, 2001). However, since $\Delta\chi^2$ tests are sensitive to large sample size (i.e., over rejection of invariance tests; Putnick & Bornstein, 2016), we also based our decision on the combination of the overall model fit, and changes in CFI, RMSEA and SRMR. We used the following criterion of model fit change: .01 for Δ CFI, and .015 for Δ RMSEA and Δ SRMR (Putnick & Bornstein, 2016).

¹ In the U.K., the difference between the original model and the three-factorial model in which social and economic dimensions were merged together was non-significant ($\Delta\chi^2 (1) = 0.327$, $p = 0.57$). However, given that (1) there was no substantial improvement in the model fit based on changes in CFI and RMSEA, and (2) significant $\Delta\chi^2$ tests for these models in Italy ($\Delta\chi^2 (1) = 18.29$, $p < .001$), we retained the second-order, four-dimensional operationalisation.

Table 3. Results of invariance tests (Study 2).

	Models	χ^2 (<i>df</i>)	$\Delta\chi^2$ (Δdf)	CFI	RMSEA	SRMR	Δ CFI	Δ RMSEA	Δ SRMR
Italy vs. U.K.									
M1: Configural invariance	—	245.92 (146)	—	.979	.043	.034	—	—	—
M2: Metric invariance of the first-order factors	M2: M1	260.82 (156)	14.52 (10) ^{n.s.}	.978	.042	.041	.001	.001	.007
M3: Metric invariance of the first- and second- order factors	M3: M2	266.51 (159)	5.57 (3) ^{n.s.}	.978	.043	.047	.000	.001	.006
M4: Scalar invariance of the first-order factors	M4: M3	320.34 (169)	68.20 (10) ^{**}	.969	.049	.051	.009	.006	.004
M5: Scalar invariance of the first- and second- order factors	M5: M4	373.23 (172)	63.90 (3) ^{**}	.958	.056	.058	.011	.007	.007
Italy: Males vs. Females									
M1: Configural invariance	—	163.13(146)	—	.991	.027	.040	—	—	—
M2: Metric invariance of the first-order factors	M2: M1	169.92 (156)	6.17 (10) ^{n.s.}	.993	.024	.046	.002	.003	.006
M3: Metric invariance of the first- and second- order factors	M3: M2	170.16 (159)	0.53 (3) ^{n.s.}	.994	.021	.047	.001	.003	.001
M4: Scalar invariance of the first-order factors	M4: M3	187.97 (169)	19.34 (10) [*]	.990	.027	.050	.004	.006	.003
M5: Scalar invariance of the first- and second- order factors	M5: M4	189.49 (172)	1.00 (3) ^{n.s.}	.991	.025	.050	.001	.002	.000
U.K.: Males vs. Females									
M1: Configural invariance	—	263.21 (146)	—	.964	.062	.040	—	—	—
M2: Metric invariance of the first-order factors	M2: M1	274.62 (156)	10.15 (10) ^{n.s.}	.963	.061	.047	.001	.001	.007
M3: Metric invariance of the first- and second- order factors	M3: M2	276.00 (159)	1.834 (3) ^{n.s.}	.964	.060	.051	.001	.001	.004
M4: Scalar invariance of the first-order factors	M4: M3	293.88 (169)	18.02 (10) ^{n.s.}	.961	.060	.052	.003	.000	.001
M5: Scalar invariance of the first- and second- order factors	M5: M4	296.59 (172)	2.03 (3) ^{n.s.}	.961	.059	.067	.000	.001	.015

Note: Scaled χ^2 and $\Delta\chi^2$ are reported. *df* = degrees of freedom.

* $p < .05$; ** $p < .001$; n.s. = non-significant ($p > .05$).

First, we performed invariance tests at the country level. An unrestricted second-order model exhibit good fit to the data ($\chi^2(146) = 245.92$, CFI = .98, TLI = .97, RMSEA = .04, SRMR = .03), meaning that each construct was measured by the same items in both Italy and U.K. Model 2 tested the invariance of first-order factor loadings and was nested within Model 1. As can be seen in Table 3, the $\Delta\chi^2$ between the models was non-significant ($\Delta\chi^2[10] = 14.52$, $p = .15$.) and Δ CFI, Δ RMSEA and Δ SRMR were small ($< .01$), indicating invariance of the first order factor loadings across the groups. Supporting metric invariance of second-order factor loadings (Model 3), the $\Delta\chi^2$ test between Model 2 and Model 3 was not significant ($\Delta\chi^2[3] = 5.67$, $p = .13$) with marginal values for Δ CFI, Δ RMSEA and Δ SRMR ($< .01$). These findings suggests the equal meaning of fairness construct across Italy and U.K.

Model 4, nested within Model 3, tested for the scalar invariance of the first-order factors. The $\Delta\chi^2$ between these models was significant ($\Delta\chi^2[10] = 68.20$, $p < .001$), but Δ CFI, Δ RMSEA and Δ SRMR were below $< .01$, supporting scalar invariance of the first-order factors (see Table #). Finally, Model 5 tested for scalar invariance of the second-order factor and was nested in Model 4. Although, the chi-square difference test between these models was significant ($\Delta\chi^2[3] = 63.90$, $p < .001$), Δ RMSEA and Δ SRMR were below $.01$ and Δ CFI was $.011$, together suggesting no substantial deviation of the model fit. These results indicate scalar invariance of the second-order factors. Taken together, the results of Model 4 and Model 5 imply that means of the four first-order factors and the mean of the second-order factor of FRN could be compared with a degree of confidence.

We then tested for measurement invariance across gender (see Table 3). In Italy, we found non-significant $\Delta\chi^2$ between Model 1 and Model 2 ($\Delta\chi^2[10] = 6.17$, $p = .80$), Model 2 and Model 3 ($\Delta\chi^2[3] = 0.53$, $p = .91$) with Δ CFI, Δ RMSEA and Δ SRMR between these models were $\leq .01$. The $\Delta\chi^2$ between Model 3 and Model 4 was significant ($\Delta\chi^2[10] = 19.34$, $p = .04$), but Δ CFI, Δ RMSEA and Δ SRMR were smaller than $.01$, supporting scalar invariance of the first-order factors. The $\Delta\chi^2$ between Model 4 and Model 5 was non-significant ($\Delta\chi^2[3] = 1.00$, $p = .80$). As shown in Table 3, in the U.K., the $\Delta\chi^2$ across all model comparisons was non-significant and all Δ CFI, Δ RMSEA and Δ SRMR were well above their respective cut-off values. Taken together, the results in both Italy and the U.K., are supportive of configural, metric and scalar invariance of FRN across gender.

4.2.3 Measurement model assessment and common method bias

We first assessed the measurement model in which we modelled all first-order constructs as reflective and second-order constructs as reflective-reflective. The overall measurement model had acceptable fit to the data in Italy ($\chi^2(1466) = 2157.01$, CFI = .93, TLI = .93, RMSEA = .04, SRMR = .06) and the U.K. ($\chi^2(1466) = 2451.02$, CFI = .93, TLI = .93, RMSEA = .04, SRMR = .05). As shown in Table 4, almost all first-order indicators loaded significantly and substantially (>.70) on their respective constructs, confirming individual indicator reliability. Although few items had their loadings below .70, we retained them in the analysis. Supporting the measurement's reliability, the values of ρ were greater than .70 for each construct (Nunnally & Bernstein, 1994). For all constructs, AVE values exhibited acceptable values above the required threshold of .50, indicating that the constructs explained more than the half of the variance of their indicators. We report the assessment of discriminant validity among the constructs below. Finally, we assessed common method bias using a CFA marker variable approach (Williams et al., 2010). The results (see Web Appendix) demonstrate that in both Italy and the U.K., no significant difference existed between Method-U and Method-R, suggesting that common method variance did not exert any significant influence on the relationship between variables. The results, hence, confirm that common method bias did not possess a serious concern in the study.

Table 4. Psychometric properties of the measurements model (Study 2).

Latent construct	Item Code	Italy			U.K.		
		λ	ω	AVE	λ	ω	AVE
First-order constructs							
Fair trade concern	FT_cnr_1	.88			.78		
	FT_cnr_2	.81	.72	.54	.69	.73	.50
	FT_cnr_3	.44			.64		
Fair trade scepticism	FT_scept_1	.79			.76		
	FT_scept_2	.70	.80	.57	.86	.78	.57
	FT_scept_3	.78			.61		
Information quality	FT_infqual_1	.76			.70		
	FT_infqual_2	.62	.75	.51	.77	.80	.57
	FT_infqual_3	.77			.79		
Purchase intention toward fair trade products	FT_PI_1	.86			.90		
	FT_PI_2	.95	.94	.83	.88	.92	.80
	FT_PI_3	.91			.91		
Perceived distributive justice of FTOs	FTO_DSJ_1	.92			.90		
	FTO_DSJ_2	.92	.92	.79	.94	.90	.76
	FTO_DSJ_3	.83			.77		
Perceived procedural justice of FTOs	FTO_PSJ_1	.83			.87		
	FTO_PSJ_2	.82	.88	.70	.87	.91	.77
	FTO_PSJ_3	.87			.88		
Perceived interactional justice of FTOs	FTO_ISJ_1	.91			.92		
	FTO_ISJ_2	.88	.89	.71	.90	.88	.70
	FTO_ISJ_3	.73			.68		
Environmental belief	ENV_blv_1	.85			.89		
	ENV_blv_2	.68	.79	.52	.73	.83	.56

	ENV_blv_3	.56			.68		
	ENV_blv_4	.75			.67		
	ENV_cnr_1	.81			.84		
Environmental concern	ENV_cnr_2	.77			.83		
	ENV_cnr_3	.81	.86	.61	.81	.89	.68
	ENV_cnr_4	.74			.82		
	SC_scnr_1	.86			.90		
Marker	SC_scnr_2	.76	.86	.66	.89	.93	.81
	SC_scnr_3	.82			.92		
Second-order constructs							
	Social	.91			.95		
Fairness	Economic	.91			.95		
	Informational	.67	.87	.74	.81	.91	.83
	Environmental	.94			.93		
	Political	.85			.92		
Ethical consumption behaviour	Social	.83	.80	.72	.79	.84	.76
	Environmental	.86			.90		

Note: λ = standardized loadings. For second-order constructs, second-order standardized loadings are reported. All loadings are significant at $p < .001$ level.

4.2.4. Assessment of construct validity

The inter-factor correlations in Table 5 and 6 reveal the extent to which the predictions regarding convergent and discriminant validity were supported for the overall measurement. With regard to convergent validity, we found that the FRN was strongly and significantly related to FT concern, FT information quality, FT purchase intentions, ethical consumption behaviour, environmental beliefs, environmental concern and three dimensions of justice of FTOs (distributive, procedural and interactional) with correlations ranging from .38 to .75 in Italy (p 's $< .001$), and from .27 to .77 in the U.K. (p 's $< .001$). All these relationships were in the expected positive direction. As predicted, we found a negative and significant relationship between FRN and fair-trade scepticism (Italy: $\varphi = -.33$, $p < .001$; U.K.: $\varphi = -.27$, $p < .001$).

Table 5. Descriptive statistics, inter-factor correlations, and HTMT2 ratios for Italy (Study 2).

Latent construct	1	2	3	4	5	6	7	8	9	10	11	12	
1. FRN	(.86)	.60	.31	.19	.49	.39	.44	.51	.44	.54	.77	.05	
2. Fair trade concern	.57**	(.73)	.40	.13	.67	.59	.67	.65	.40	.50	.69	.04	
3. Fair trade scepticism	-.33**	-.59**	(.75)	.52	.56	.47	.57	.50	.33	.36	.40	.03	
4. Fair trade information quality	-.23**	-.35**	.56**	(.71)	.18	.38	.33	.36	.11	.12	.19	.18	
5. Fair trade purchase intentions	.51**	.68**	-.56**	-.26**	(.91)	.55	.61	.58	.42	.46	.60	.03	
6. Distributive justice of FTOs	.38**	.63**	-.46**	-.39**	.55**	(.88)	.85	.86	.27	.28	.42	.06	
7. Procedural justice of FTOs	.42**	.71**	-.56**	-.36**	.60**	.84**	(.84)	.90	.34	.43	.52	.04	
8. Interactional justice of FTOs	.47**	.64**	-.49**	-.36**	.57**	.84**	.88**	(.84)	.39	.43	.56	.03	
9. Environmental belief	.45**	.40**	-.34**	-.13 ^{n.s.}	.44**	.27**	.34**	.39**	(.72)	.82	.49	.21	
10. Environmental concern	.56**	.51**	-.37**	-.21**	.45**	.29**	.44**	.42**	.80**	(.78)	.62	.15	
11. Ethical consumption behaviour	.75**	.65**	-.41**	-.28**	.60**	.42**	.52**	.52**	.48**	.63**	(.85)	.05	
12. Social media self-control failure ^a	.05 ^{n.s.}	.03 ^{n.s.}	.00 ^{n.s.}	.19**	.05 ^{n.s.}	.01 ^{n.s.}	.02 ^{n.s.}	.05 ^{n.s.}	0.21**	0.20**	0.07	(.81)	
	<i>M</i>	5.88	5.02	3.03	3.97	5.69	5.10	5.18	5.13	6.37	6.30	5.07	3.25
	<i>SD</i>	0.75	0.96	1.17	1.11	1.03	0.94	0.95	0.95	0.69	0.79	0.91	0.97

Note: The square root of AVE of each construct are shown on the diagonal in parenthesis. HTMT2 ratios are reported above the diagonal.

^a Marker variable.

** $p < .001$; ^{n.s.} = non-significant ($p > .05$).

Table 6. Descriptive statistics, inter-factor correlations, and HTMT2 ratios for the U.K. (Study 2).

Latent construct	1	2	3	4	5	6	7	8	9	10	11	12
1. FRN	(.91)	.62	.20	.02	.52	.30	.26	.39	.44	.56	.79	.01
2. Fair trade concern	.63**	(.71)	.14	.12	.69	.26	.30	.35	.51	.61	.62	.25
3. Fair trade scepticism	-.27**	-.26**	(.75)	.64	.43	.50	.47	.51	.07	.20	.21	.14
4. Fair trade information quality	-.02 ^{n.s.}	.00 ^{n.s.}	.64**	(.75)	.15	.32	.36	.30	.10	.04	.05	.03
5. Fair trade purchase intentions	.52**	.70**	-.46**	-.15*	(.89)	.50	.50	.55	.40	.48	.68	.17
6. Distributive justice of FTOs	.31**	.36**	-.53**	-.31**	.51**	(.87)	.74	.80	.09	.20	.36	.03
7. Procedural justice of FTOs	.27**	.37**	-.50**	-.36**	.50**	.75**	(.88)	.86	.12	.17	.31	.04
8. Interactional justice of FTOs	.38**	.43**	-.54**	-.31**	.53**	.79**	.83**	(.84)	.15	.25	.39	.03
9. Environmental belief	.48**	.54**	-.10	.09 ^{n.s.}	.44**	.13*	.15*	.17*	(.75)	.84	.42	.18
10. Environmental concern	.57**	.60**	-.22**	.03 ^{n.s.}	.48**	.21**	.18*	.26**	.87**	(.82)	.63	.18
11. Ethical consumption behaviour	.77**	.61**	-.30**	-.06	.69**	.36**	.32**	.38**	.46**	.63**	(.87)	.03
12. Social media self-control failure ^a	.02 ^{n.s.}	.24**	.15*	.03 ^{n.s.}	.17*	.00 ^{n.s.}	.02 ^{n.s.}	.03 ^{n.s.}	.20**	.18*	.05 ^{n.s.}	(.90)
<i>M</i>	5.41	5.32	3.46	4.31	5.60	5.04	5.06	5.08	6.14	5.86	4.71	3.12
<i>SD</i>	0.98	0.93	1.22	1.14	1.08	1.03	0.94	0.91	0.77	1.00	0.99	1.13

Note: The square root of AVE of each construct are shown on the diagonal in parenthesis. HTMT2 ratios are reported above the diagonal.

^a Marker variable.

* $p < .05$; ** $p < .001$; ^{n.s.} = non-significant ($p > .05$).

We used a combination of Fornell–Larcker (1981) and HTMT2 (Roemer et al., 2021) in assessing discriminant validity. Results are reported in Table 5 and 6. Following the Fornell–Larcker criterion, the square root of AVE for FRN was greater than the correlation between the respective constructs, supporting discriminant validity of the construct. Next, we assessed discriminant validity with HTMT2 method using both conservative critical value of .85 and more liberal value of .90 (Henseler et al., 2015). Note, to calculate HTMT2 ratios, we estimated a new measurement model in which we modelled two second-order constructs (fairness and ethical consumption behaviour) based on the two-stage approach (e.g., Sarstedt et al., 2019). Issuing additional evidence of discriminant validity, the HTMT2 ratios between FRN and other studied constructs ranged from .19 to .77 in Italy and from .02 to .79 in the U.K., well below the threshold of .85 (Henseler et al., 2015). Likewise, Fornell–Larcker and HTMT 2 criteria supported discriminant validity for other constructs.² Finally we examined the relationship between FRN and fair-trade information quality which revealed small and negative correlation ($\phi = -.23, p < .001$) in Italy, and non-significant correlation in the U.K. ($\phi = -.02, p > .05$). Taken together, the results of this study issued evidence of the construct validity of FRN.

5. Study 3: Predictive validity

The objectives of this study were to (1) confirm the psychometric properties of the hypothesised second-order factorial model using new independent samples and (2) provide further evidence for construct validity by assessing predictive and nomological validity of the FRN.

Direct relationships

Studies on ethical purchasing behaviour have focused on measuring the impact of general attitude and interest or specific attitude on purchasing behaviour (e.g., De Pelsmacker & Janssens, 2007; Balabanis et al., 2016; Zerbini et al., 2019) and commitment (Eisingerich and Rubera, 2010). These studies have shown that there is a direct and positive correlation between these variables. Consumers with a positive interest in fairness will be more willing to make fair purchases. Also, the more the disposition towards fairness, the more the commitment towards fair trade certified products. Finally, a positive individual predisposition towards fairness will also have an impact on actual consumer behaviour (Giampietri et al., 2016).

² Although our main goal was to provide evidence for discriminant validity of FRN, we note that some of the studied constructs exhibit marginal issues with discriminant validity. For the three constructs of FTOs, discriminant validity could be issued only when using a more liberal critical value .90 for HTMT2.

H1. Disposition towards fairness positively influences willingness to purchase fair products

H2. Disposition towards fairness positively influences commitment to fair trade certified products

H3. Disposition towards fairness positively influences frequency of engagement with fair products and activities

Emotions play a key role in ethical choices (Gregory & Smith, 2013). On the basis of an adaptation by Baptista et al., (2020) of the positive and negative affect schedule (PANAS) scale formulated by Watson et al. in 1988, we developed the hypothesis that a person with a high predisposition towards fairness experiences positive emotions when purchasing products that ensure fairness along the supply chain. On the contrary, in terms of the negative emotions, at the core, our prediction is that a person with higher fairness disposition is likely to experience negative emotions when does not engage in consumption of fair products.

H4. The disposition towards fairness positively influences the experience of positive emotions when buying fair products

H5. Disposition towards fairness positively influences the experience of negative emotions when not buying fair products

Indirect relationship (mediators)

The literature demonstrates the possible impact of commitment on behaviour (Amine, 1998; Eisingerich and Rubera, 2010; Lokhorst et al., 2013; Adam and Fayolle, 2015), as well as the possible impact of emotions on commitment (Burke and Stets, 1999; Atakan and Soscia, 2021). With this background, we wanted to test whether these premises also applied to the context of ethical consumption.

H6. Commitment to fair trade certified products mediate the relationship between consumer disposition towards fairness and willingness to purchase fair products

H7. Commitment to fair trade certified products mediate the relationship between consumer disposition towards fairness and frequency of engagement with fair product

H8. Positive emotions mediate the relationship between consumer disposition towards fairness and commitment to fair trade certified products

H9. Negative emotions mediate the relationship between consumer disposition towards fairness and commitment to fair trade certified products

5.1. Participants, procedure and measurements

Participants were 349 adults in Italy ($M_{\text{age}} = 30.30$; $SD_{\text{age}} = 9.02$; 48.71% females; 49.86% males) and 350 adults in the U.K. ($M_{\text{age}} = 46.73$; $SD_{\text{age}} = 15.55$; 51.71% females; 48% males) recruited using Prolific. Participants responded to the 14-item FRN measurement in addition to measurements of commitment, experience of negative emotions, experience of positive emotions, frequency of engagement and willingness to purchase presented in a randomized order. Next, participants then completed a demographic survey. Similar to Study 2, we derived and adapted all measurements from the existing literature, and we used the same translation procedure to develop Italian versions ([Web] Appendix).

5.2. Analysis and results

5.2.1. Confirmatory factor analysis of FRN

Replicating the findings of Study 2, the second-order factorial model exhibited a good fit to the data in Italy ($\chi^2(73) = 137.64$, CFI = .97, TLI = .97, RMSEA = .05, SRMR = .03) and in the U.K. ($\chi^2(73) = 116.12$, CFI = .98, TLI = .98, RMSEA = .04, SRMR = .04). The second-order factor loadings were statistically significant at .001 and substantive in size, ranging from .77 to .98 ($M = .91$) in Italy, and from .64 to .93 in the U.K. ($M = .84$). The measurement demonstrated good reliability (Italy: $\omega = .92$; U.K.: $\omega = .87$). The AVE for the second-order construct was .83 and .72 in Italy and the U.K. respectively. The measurement invariance tests were supportive of configural, metric and scalar invariance of FRN across Italy and the U.K.

5.2.2. Measurement model assessment and common method bias

We first evaluated the measurement model by examining the reliability, convergent and discriminant validity of the latent constructs using PLS-SEM. All latent constructs were modelled as reflective. We used a repeated indicator approach to obtain parameter estimates for a second-order construct of FRN (Sarstedt et al., 2019).

The results of the measurement model assessments are reported in Table 7. We removed one item in Italy and two items in the U.K. because their factor loadings were below .50. In the U.K., we also removed one item with the lowest factor loading (.51) from the Willingness to Purchase scale to ensure that the AVE for that latent construct is above .50. In both Italy and the U.K., all the remaining indicators' loadings were in acceptable range and were significant at the .001 level, hence supporting measurements' convergent validity at the item level. Composite reliabilities for all latent variables in both groups were well above the recommended .70 cut-off value, demonstrating reliability of the measurements. The values of AVE for all construct in Italy and the U.K. exceeded the threshold of .50, indicating that each latent construct accounted for at least 50% of the variance in the items. We tested discriminant validity of the latent constructs using HTMT approach. The results in Table 7 indicate that the measurement model demonstrated sufficient discriminant validity. Finally, the results of marker variable approach indicated no issues with method bias in both samples (see Web Appendix).

Table 7. Psychometric properties of the measurements model (Study 3).

Latent construct	Item Code	Italy			U.K.		
		λ	CR	AVE	λ	CR	AVE
First-order constructs							
Commitment	CMT_1	.85			.89		
	CMT_2	.90	.90	.75	.87	.91	.79
	CMT_3	.80			.90		
	CMT_5	.90			.90		
Experience of Positive Emotions	EM_POS_1	.90			.91		
	EM_POS_2	.92	.89	.82	.94	.92	.86
	EM_POS_3	.90			.93		
Experience of Negative Emotions	EM_NEG_1	.93			.94		
	EM_NEG_2	.90	.92	.84	.95	.94	.88
	EM_NEG_3	.92			.93		
Frequency of Engagement	FRE_1	.85			.82		
	FRE_2	.74			.80		
	FRE_3	.66	.76	.54	.67	.75	.54
	FRE_4	.67			.63		
Willingness to Purchase	WTP_1	.72			.84		
	WTP_2	.77			.80		
	WTP_3	.67			.71		
	WTP_4	.68	.85	.51	—	.79	.53
	WTP_5	.75			.53		
	WTP_6	.63			—		
	WTP_7	.79			.73		

Second-order construct (repeated indicators approach)

	Social	.90			.85		
Fairness	Economic	.94	.94	.80	.91	.91	.72
	Informational	.80			.72		
	Environmental	.92			.89		

Heterotrait-monotrait ratio (HTMT)

	1	2	3	4	5	6
1. FRN		.50	.31	.45	.32	.42
2. Commitment	.50		.53	.56	.72	.76
3. Experience of negative emotions	.33	.51		.45	.32	.4
4. Experience of positive emotions	.39	.58	.47		.44	.50
5. Frequency of engagement	.33	.71	.42	.49		.73
6. Willingness to purchase	.48	.68	.30	.51	.60	

Note: λ = standardized loadings. For second-order constructs, second-order standardized loadings are reported. CMT_4 was removed in both groups; WTpurchase_4 and WTpurchase_5 were removed in the U.K. HTMT values for Italy are reported below the diagonal and for the U.K. above the diagonal. All loadings are significant at $p < .001$ level.

5.2.3. Structural model assessment and hypotheses testing (direct effect)

After demonstrating above that the measurement model exhibited satisfactory reliability and validity, we proceeded with the analysis of the structural model in order to test the hypothesized relationships between the latent constructs (Henseler et al. 2009). We assessed the ability of the structural model in predicting the endogenous latent variables (Hair et al. 2014) by examining the coefficient of determination (R^2), the coefficient of predictive relevance (Q^2 criterion), direction and significance of path coefficients, and the effect size (f^2). In addition, to examine the out-of-sample prediction power, we used PLSpredict. We calculated the statistical significance of the path coefficients using a 5,000 bootstrapping samples. Prior to the main analysis, we assessed variance inflation factors (VIFs) which were smaller than 2.0 in both groups, indicating that multicollinearity was not a serious concern.

As demonstrated in Figure 2a and 2b, the R^2 values of endogenous latent variables ranged from .13 to .45 in Italy and from .10 to .46 in the U.K., indicating that the model exhibited adequate in-sample predictive power. In both groups, Q^2 for endogenous constructs were well above zero, indicating that exogenous constructs had strong predictive relevance regarding the endogenous constructs (Hair, et al., 2011). Next, we used PLSpredict procedure (ten folds, ten repetitions; see Web Appendix for full results) and RMSE as a prediction statistic to examine the model's out-of-sample predictive power (Shmueli et. al., 2019). In Italy, the majority of the dependent constructs' indicators had lower prediction errors (in terms of RMSE) compared to the predictions generated for the indicators by the linear regression model (LM). Therefore, in Italy the model exhibited medium predictive power (Shmueli et. al., 2019). In the U.K. the minority of the construct's

indicators produced lower prediction errors compared to the LM, meaning that the model had a low predictive power.

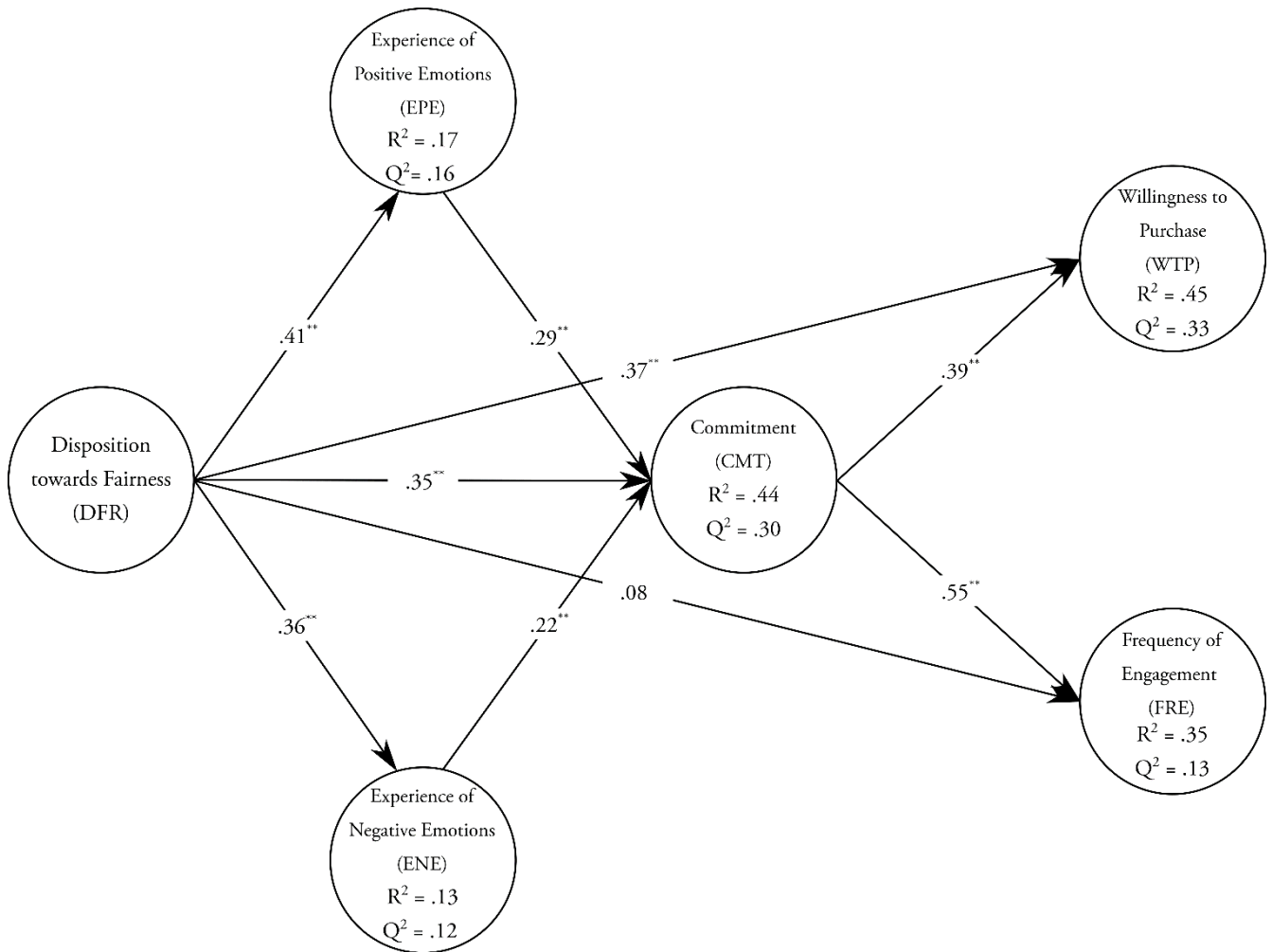


Figure 2a. Results for the hypothesized model for Italy. *Note:* Standardized path estimates are reported. R^2 and Q^2 are given for endogenous constructs; $**p < .01$

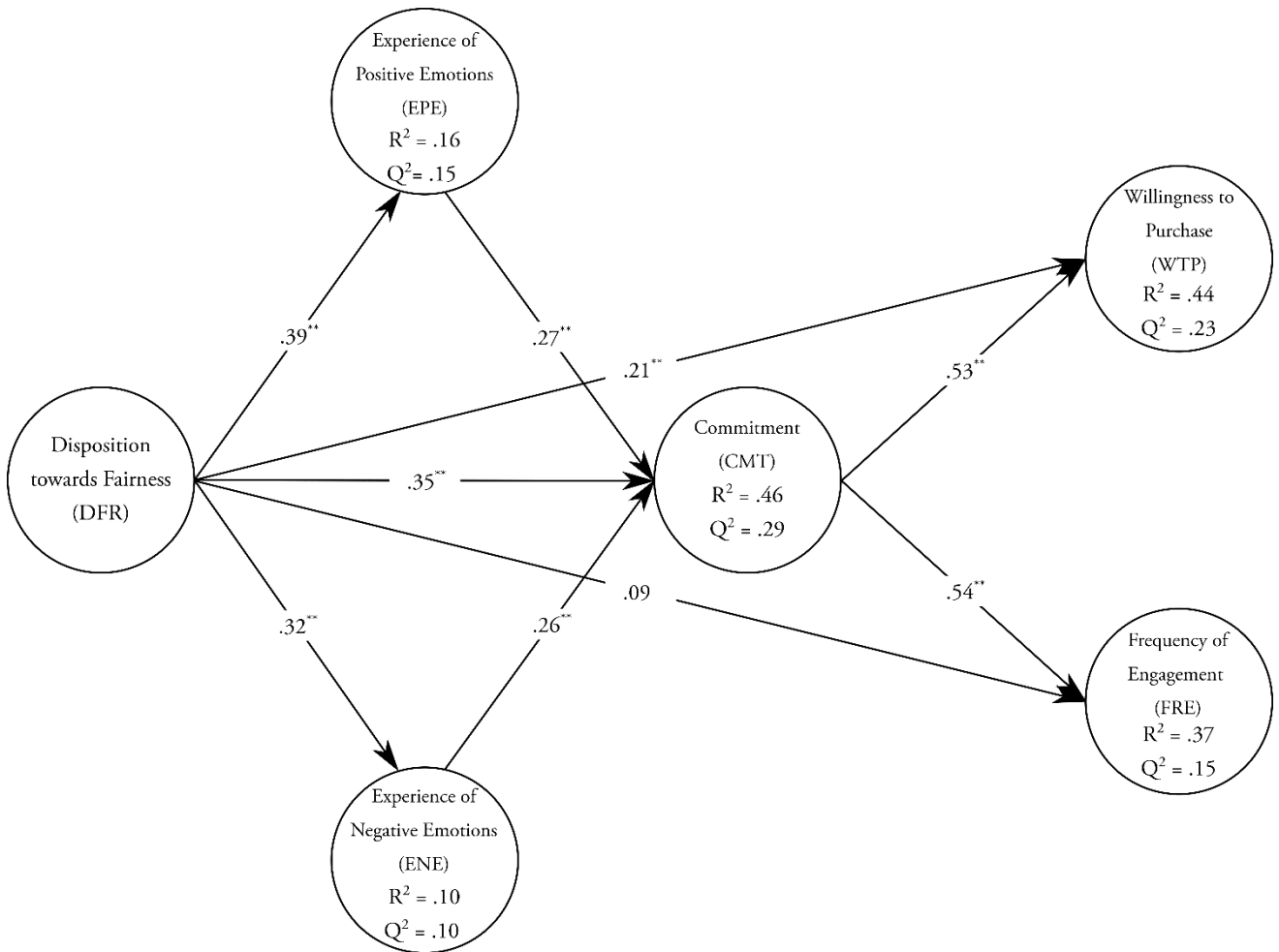


Figure 2b. Results for the hypothesized model for the U.K. *Note:* Standardized path estimates are reported. R^2 and Q^2 are given for endogenous constructs; $**p < .0$

Table 8 provides standardized path coefficients (β), significant levels (t -statics), and effect size (f^2) for each path. The f^2 values of .02, .15 and .35 indicate small, medium, and large effect size, respectively (Cohen, 1988). In both Italy and the U.K., the model path estimates revealed that a FRN has a positive direct effect on willingness to purchase (Italy: $\beta = .37, p < .001, f^2 = .18$; U.K.: $\beta = .21, p < .001, f^2 = .05$) and commitment (Italy: $\beta = .35, p < .001, f^2 = .18$; U.K.: $\beta = .35, p < .001, f^2 = .18$). Therefore, the results provide support for H1 and H2 respectively. The direct impact of FRN on frequency of engagement was non-significant (Italy: $\beta = .08, p = .17$; U.K.: $\beta = .09, p = .06$). Therefore, H3 was not supported. In support of H4, the FRN has a significant and positive impact on experience of positive emotions during consumption (Italy: $\beta = .41, p < .001, f^2 = .18$; U.K.: $\beta = .39, p < .001, f^2 = .18$). In H5 we predicted that dispositional fairness positively impacts the experience of negative emotions when not engaging in consumption of fair product. This hypothesis received support in Italy ($\beta = .36, p < .001, f^2 = .15$) and the U.K. ($\beta = .32, p < .001, f^2 = .12$).

Table 8. Hypothesis Assessment (Study 3).

Hypothesis	β	t -value	f^2	Decision
Italy				
Direct effect				
H1 FRN → Willingness to purchase	.37**	5.58	.18	Supported
H2 FRN → Commitment	.35**	6.93	.18	Supported
H3 FRN → Frequency of engagement	.08 ^{n.s}	1.34	.01	Rejected
H4 FRN → Experience of positive emotions	.41**	8.65	.20	Supported
H5 FRN → Experience of negative emotions	.35**	8.18	.15	Supported
Specific Indirect Effects				
H6 FRN → Commitment → Willingness to purchase	.14**	5.37		Supported
H7 FRN → Commitment → Frequency of engagement	.19**	5.75		Supported
H8 FRN → Experience of positive emotions → Commitment	.12**	4.68		Supported
H9 FRN → Experience of negative emotions → Commitment	.08**	3.87		Supported
U.K.				
Direct effect				
H1 FRN → Willingness to purchase	.21**	3.64	.06	Supported
H2 FRN → Commitment	.35**	7.65	.18	Supported
H3 FRN → Frequency of engagement	.09 ^{n.s}	1.90	.01	Rejected
H4 FRN → Experience of positive emotions	.39**	7.35	.18	Supported
H5 FRN → Experience of negative emotions	.32**	6.37	.12	Supported
Specific Indirect Effects				
H6 FRN → Commitment → Willingness to purchase	.19**	6.09		Supported
H7 FRN → Commitment → Frequency of engagement	.19**	6.24		Supported
H8 FRN → Experience of positive emotions → Commitment	.11**	4.57		Supported
H9 FRN → Experience of negative emotions → Commitment	.09**	4.18		Supported

Note: Standardized estimates (β) are reported; f^2 is reported for direct effects. Critical t -values: ** 2.58 ($p < .001$); ^{n.s} >1.96 ($p > .05$)

5.3. Tests for mediation

Consistent with the non-parametric PLS path modeling approach, we used a non-parametric bootstrapping procedure to test the significance of the mediating effects (Henseler et al., 2009). As shown in Table 8, the results provide evidence for the hypothesized mediating roles of commitment, positive emotions, and negative emotions. Specifically, in support of H6, the results show positive and significant indirect effect (Italy: $\beta = .14, p < .001$; U.K.: $\beta = .19, p < .001$) of the FRN on willingness to purchase via commitment. Consequently, this result implies partial mediation because both the direct effects and indirect effects are significant. In support for H7, the indirect effect of the FRN on frequency of engagement via commitment is positive and significant (Italy: $\beta = .19, p < .001$; U.K.: $\beta = .19, p < .001$). Given that the direct effect is not significant while the indirect effect is significant, leads us to conclude that commitment fully mediates the relationship between FRN and frequency of engagement.

In support for H8, the results of the mediation analysis revealed that there were significant indirect effects of the FRN on commitment via positive emotions (Italy: $\beta = .12, p < .001$; U.K.: $\beta = .11, p < .001$). Since both the indirect and the direct effect are significant, we concluded that the effect of FRN on commitment is partial mediated by positive emotions. Further, in support of H9 the influence of FRN on commitment was partially mediated by negative emotions, because both the direct and the indirect effects (Italy: $\beta = .08, p < .001$; U.K.: $\beta = .09, p < .001$) were positive and significant.

6. Conclusion

Although prior researchers discussed about the relevance of fairness in the agro-food sector and consumer behaviour towards fair products, there has not been much research developing a scale to measure consumer interest and disposition towards fairness along the agro-food chain when food shopping. In order to address this research gap, this study was undertaken. The purpose of this paper was to develop a reliable, valid scale for measuring the role of consumer disposition toward fairness in agro-food chains and the possible impact on actual consumer behaviour. The presented FRN scale comprises of 14 items capturing the four dimensions: economic, social, environmental, and informational. Results of this study corroborate that the fairness scale is reliable and consistently demonstrate convergent, discriminant and predictive validity. The predictive grid of the FRN scale offers potential positive effect of consumers' disposition towards fairness on willingness to purchase fair products. These results give significant theoretical implications mentioned below. As the developed scale could be used further to provide theoretical groundwork leading to an improved thoughtfulness about the way consumers can link themselves to fair products. Therefore,

the proposed scale will support companies in their expansion as well as commercialization of fair products to attain a more sustainable food system.

6.1 Theoretical and practical implications

This study constitutes the first attempt to a) conceptualize and operationalize the broad meaning of fairness along agro-food chains from a consumers perspective, and b) construct a comprehensive and empirically tested measurement scale of this notion. Thus, this work is a significant contribution to the further development of the fair marketing. Overall, our results offer three main theoretical implications.

First, the development of a scale to measure consumers' disposition towards fairness along the agro-food chains. From a methodological perspective, marketing scholars and academics now have at their disposal a robust theory of FRN (Study 1–Study 3), which provides a holistic concept of fairness from the consumers' perspective. Three studies, including qualitative insights from experts and academics, and quantitative studies from a relevant population in a cross-country analysis, confirm the reliability and the validity of the scale and offer confidence for any future scholarly research design.

Second, our results extend earlier studies about fairness (e.g., Busch & Spiller 2016) by providing an updated and comprehensive investigation into fairness dimensions. In the broader justice/ethics/fairness literature, most empirical studies focus on the economic dimensions of fairness seen as the ratio of price distributions among actors. Our results suggest that fairness is a four dimensions construct based on economic, social, environmental and organisational dimensions.

Third, the research provides evidence for construct validity by assessing the predictive and nomological validity of the FRN. The results of the nomological validity test further support prior empirical research regarding the relationship between consumers' disposition towards fairness and consumers' behavioural responses. We support these results by assessing that consumers' willingness to purchase fair products with fair activities is positively linked to consumers' interest in fairness.

Regarding business strategy, a plethora of initiatives focus on specific dimensions of fairness, for instance, concentrating on improved environmental outcomes or economic returns to producers (Asioli et al., 2020). However, the scale development process indicates that economic, environmental, social, and informational fairness are dimensions of a higher-order structure. Rather than focusing on one dimension of fairness independently, managers should adopt a holistic approach, devising initiatives that address all four dimensions.

Initiatives that generate improved fairness within agri-food supply chains are typically local in scale and have a higher underlying cost structure (Back et al., 2019). Managers consequently seek to identify consumers that are willing to pay a premium for products that lead to fairer agri-food supply chain outcomes (Bürgin & Wilken, 2022). Geographical, demographic, and socio-economic variations in fairness dispositions may thus be useful in identifying the most promising food environment and segments for initiatives, with areas and groups scoring higher on FRN being more appealing. The study of consumer disposition makes it possible to identify consumer market segments. There are numerous literary sources dealing with segmentation. Most of them lead to the differentiation of sub-groups, which in turn allows for the identification of behaviours and motivations (Gazdecki et al., 2021). Aside from market segmentation, managers could also use the FRN scale to investigate the salience of fairness in agri-food supply chains to their current and potential customers. This can improve a company's market intelligence regarding appropriate positioning in its markets. Overall, the FRN scale can be readily and easily applied in market research studies.

Finally, the FRN scale has relevance for policy makers, who recognize that the outcomes of their efforts to improve fairness in agri-food supply chains depend, in part, on consumer support (European Commission, 2020). Integrating the FRN scale into long-term citizen polling, such as Eurobarometer studies (European Commission, 2022), would provide the means to track changes in consumer dispositions toward fairness and assess relations with support for 'Farm to Fork' policies and behavioral outcomes. Moreover, scales can also be useful in assessing the effectiveness of interventions (Williams et al., 2021). For example, some NGOs and public bodies seek, through education, to alter citizens' awareness and dispositions toward fairness in agri-food supply chains (Vasileva & Reynaud, 2021). In such cases, the FRN scale could be useful for measuring changes over time and between control and treatment groups.

6.2 Limitations and future research

This study is not without limitations, which one after the other open avant-garde for future research. The first limitation of this study concerns the qualitative nature of the item selection process. As this scale is the first to measure consumers' disposition towards fairness in general, a review of the literature for item selection was the starting point. A more extensive and diverse review could capture a broader application of the concept of fairness. Second, the cross-sectional study was developed on Italian and English samples. Although there is added value in developing a scale using two different samples, it is likely that the aspects addressed in the scale will change when looking at other countries, thus expressing a different conceptualisation of fairness.

Our findings also suggest several paths for further research. The four dimensions of our FRN scale can be further extended or polarised towards more pertinent aspects in the country where it applies. In fact, future research should bear in mind that the concept of fairness is a mutable concept, dependent on many factors including the socio-economic and cultural background of the respondents. Given the changing nature of the fairness concept, it would be interesting to investigate how the proposed framework applies in different cultural, social, and economic environments. Opportunities for future studies arise in terms of how other variables might moderate the effect of consumers' disposition towards fairness on their willingness to purchase fair products as well as the effect of the latter on the consumers' frequency of engagement with fair activities. For instance, purchasing power may moderate the relationship between disposition and consumer response, as well as socio-demographic factors. Another cue for future research would be to include antecedents that explain the consumer's disposition and interest in ethics in the first place.

Given the overarching aim of any fair marketing measure is to create a sustainable food system, companies should undertake a marketing strategy aimed at informing consumers of the benefit their ethical choices bring to the system. This would motivate more consumers to buy fair products and encourage the development of fair initiatives and procedures.

Despite these limitations, the new scale fills an important gap, providing future researchers with a measurement tool ready to be used in a variety of countries and in studies with different research objectives, including the modelling of complex relationships between variables.

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CONCLUSIONS

The present doctoral dissertation rose in a context where issues of fairness, justice and ethics can no longer be ignored when discussing agro-food systems. Little taken into account so far, consumers have great potential in influencing agro-food chains with their behaviour and choices. In the field of ethical consumption and purchasing behaviour, previous research has shown that when consumers make ethical judgments in evaluating products, these influence their ethical behaviours. Consumers can express their morality and responsibility towards society and their appreciation of socially responsible food chains and products through ethical choices.

The reasons for this research are manifold. First, a lack of literature analysing the consumer's point of view on fairness. Second, a clear absence of a unique definition of the concept of fairness, and last, the non-existence of a scale measuring the degree of consumer interest in ethical products as well as being able to predict willingness to purchase and frequency of involvement with ethical products.

The literature review on the chocolate agro-food chain provided an overview of the major drivers of consumer consumption and purchasing behaviour, highlighting the positive influence of sustainability attributes of food products on consumers. In the particular case of chocolate, while it has been confirmed that chocolate is seen as a product of indulgence and its purchasing and consumption is mostly driven by taste, it can also be stated that the fair trade attribute of chocolate is the sustainability product attribute that most attracts the consumer. The analysis of the academic literature included in the review supports that sustainability as a focus of interest for researchers emerges in the early 2000s. The earliest topics dealt mainly with fair trade and environmental sustainability analysing the impact of certifications on consumers' behaviour. It was only a decade later that the concepts of fairness, ethics and justice began to appear in the academic panorama.

However, despite the fact that ethics began to be of increasing interest not only to academics but also to policy-makers, the consumer perception and disposition towards the concept of fairness was often underestimated, as well as its impact on actual behaviour. This research provides a multidimensional conceptualization that encompasses key attributes of the construct. It goes beyond existent literature that interprets fairness as distributive fairness, procedural fairness, interactional fairness and environmental fairness. The study reshapes fairness into five dimensions: Fair price, Short chain, Environment, Working condition, and Networking. These results do not only provide the literature with a new starting point for the study of fairness in the food systems, but also for companies with important knowledge about consumers. In fact, to attract and persuade ethical consumers and reap the benefits of their ethical inclinations, companies need a better understanding

of the ethical decision-making process used by consumers. From a theoretical point of view, this research offers interesting and new insights that enrich the previous literature. Other than more predictable aspects as price or environment, the research includes two new aspects under the definition of fairness: short chain and networking. It is not surprising that in recent years there has been a gradual return to traditional food systems. This is the result of the growing consumer criticism of industrial food production practices and policies, as well as the global pandemic that has pushed consumers towards feelings of solidarity with local communities and producers. The 2019 Coronavirus pandemic (COVID-19) has disrupted people's daily lives having a significant impact on global food systems and influencing all actors of the chain, from producers to consumers. Consumers have shifted towards short supply chains out of a sense of morality for local producers.

One of the most important aspects to consider in the future is that consumers believe that ethics is more strongly expressed in short supply chains. When the relationship between actors is so direct, it is easier to create fairness along the agro-food chains. In particular, consumers perceive that short food chains contribute to closer communication and increased collaboration, which strengthen local identity and community building. This moves in the same direction of the United Nations' objectives on sustainable production and consumption that focus on strengthening the sustainability of the food system through the direct involvement of all actors, from the primary producer to the final consumer. The consumption of local food, and thus short supply chains, not only acts as a booster for local economies but also has an impact on the environment by limiting transport in normal supply chains. In short supply chains, producers have the possibility to choose the prices of their products. In this way, producers will receive a fair price which will return in added value to the consumers. However, as demonstrated in this research, fairness, is not only about fair price. This relationship becomes a way for consumers not only to understand the right price but also to see the work behind these products and thus to appreciate farmers with loyalty. Fairness translates into the possibility that consumers have to make an informed choice about the products they consume. The fairness of short supply chains is grounded in the relationships of trust between farmers and consumers, creating a long-lasting relationship. This long-term commitment becomes a security for farmers, by reducing uncertainties related to changes in production and sales volumes. Moreover, since producers have direct contact with consumers, the independence and decision-making power of farmers increases. They have more freedom in marketing and sales strategies.

Furthermore, the research offers a reliable, valid and invariant multidimensional measurement of the individual disposition toward fairness in agro-food chains across two countries – Italy and the United Kingdom (U.K.). Usually, a new scale evolves previous measurement tools by adding new insights. In this case, the scale development process starts from scratch from a

qualitative analysis of the literature for the selection of items. This makes the scale the first of its kind presenting the concept of fairness in all its dimensions. This scale does not only predict consumers' willingness to purchase fair products but also the mediating role of commitment and emotions between FRN and willingness to purchase and commitment respectively. It also shows the mediating role of commitment between FRN and frequency of engagement. This is an important added value of the current research as it provides companies with a valuable tool to understand consumers' choices in relation to fair food products. Furthermore, the scale presents 14 items that fully cover the concept of fairness, easy to administer and valid across countries.

This research provides companies with recommendations to improve marketing strategies in favour of ethical consumption. Increasing knowledge about the supply chain management practices behind the end product could increase the number of consumers willing to make fair choices. Companies can reinforce their image and the existing values of their products through a coherent commercial and communication strategy. Consumers could be positively influenced about the consequences of their choices, if properly informed. Showing through ad-hoc campaigns or more communicative labels (e.g. fair remuneration assured to producers, reduced pollution, etc.) could nudge more consumers to make ethical choices.

Finally, companies should take into account the influence of emotions on their customers' purchasing decisions. When developing communication strategies for fair products, the supporting role of positive emotions (e.g. enthusiasm or pride) should be considered and highlighted through traditional media and ad hoc campaigns. This could complement the more cognitive facets of these recommendations, which target consumers' knowledge, attitudes and values regarding green consumption.