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What Makes a Price Fair? A Quantitative Study on Antecedents of Price Fairness and Its Impact on Willingness to Pay for Sustainable Coffee.

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Abstract

Purpose - Despite the high global demand for coffee, its production is often accompanied by social, financial, and environmental challenges. While these concerns are driving the growing demand for sustainable coffee, its premium prices remain a key barrier. Thus, this study aims to examine the factors that influence consumers' perceived price fairness and how this perception affects their willingness to pay for sustainable coffee.

Methodology/Approach - An online survey was conducted using systematic sampling, with 1477 consumers personally approached in front of major supermarket chains in central Gothenburg, Sweden. With a total of 207 valid responses, the final sample represented Swedish inner-city shoppers who buy coffee on a regular basis. The data were analyzed using confirmatory factor analysis and structural equation modeling.

Findings - This study revealed that perceived price fairness had a positive influence on consumers' willingness to pay for sustainable coffee. Comparison to reference prices, trust in sustainability labels and strong positive attitudes toward sustainability have proven to be important predictors in consumers' price fairness perceptions. Contrary to expectations, price transparency had no significant impact on price fairness. Furthermore, the model revealed that price fairness partially mediated the relationship between sustainability attitudes and willingness to pay.

Implications - This study extends existing theory on price fairness judgments by adding moral and ethical determinants, necessary to include in an increasing market of sustainably sourced products. The findings suggest that marketing strategies and policies should clearly communicate the environmental and social benefits of sustainable coffee to justify premium prices and promote ethical consumption. Future research should explore whether moral factors similarly influence price fairness perceptions in other sustainable product categories.

Keywords: Price Fairness; Willingness to Pay; Sustainable Coffee; Ethical Consumption; Comparison to Reference Prices; Price Transparency; Sustainability Attitudes; Trust in Labels

1 Introduction

Coffee is one of the world's most popular beverages today: Throughout the 2022/23 period, 178 million coffee bags were produced worldwide, which makes it the year with the highest production numbers so far, and one of the most traded commodities worldwide (Ridder, 2024). Its production stems mainly from small farmers in developing countries, who contribute to 70-80% of the total production, making coffee the main source of income for millions of people (Barreto Peixoto et al., 2023; Panhuysen & Pierrot, 2020; Ridder, 2024).

Despite its economic importance, conventional coffee production often comes with social, financial, and environmental sustainability concerns: Working conditions of coffee farmers are often poor and unfair, with child and forced labor still present in coffee production, and farmers living below the extreme poverty line due to low income (Barreto Peixoto et al., 2023; Panhuysen & Pierrot, 2020). Moreover, issues associated with the coffee production, such as deforestation or biodiversity loss due to the large expansion of coffee crops, have a significant negative impact on the environment (Barreto Peixoto et al., 2023). Accordingly, coffee prices are often volatile, with smallholder farmers being the first and most affected by these price fluctuations (Bermudez et al., 2022; K. Jones et al., 2024). The lack of participation of producers in the coffee value chain governance facilitates powerful stakeholders to control benefits for their own benefit, which may lead to low farm profits, poverty, corruption and a decline in coffee production (Barreto Peixoto et al., 2023).

These challenges highlight the need for alternatives, such as sustainable coffee, which is often described as organic or ecofriendly (K. Jones et al., 2024). Others define sustainable coffee as meeting environmental, economic, and social needs without compromising needs of future generations (Brundtland Report, 1987; Giovannucci & Koekoek, 2003; K. Jones et al., 2024; Verain et al., 2021), emphasizing that sustainable coffee serves more as an umbrella term. As of 2019, at least 21% of global coffee production complied with at least one of the criteria for sustainable coffee: environmental, social, or economic. A well-known example that meets all three criteria is Fairtrade certified coffee (K. Jones et al., 2024) which guarantees farmers a minimum price, ensures social and environmental standards, and usually comes at a price premium for consumers (Fuller & Grebitus, 2023).

The growing demand for sustainable coffee reflects an increasing public awareness of sustainability issues. For consumers, coffee constitutes as part of their daily routine, which emphasizes the important role of coffee in consumers' behavior and the broader interest in the conditions under which coffee is produced (Freitas et al., 2024; Ridder, 2024). In Europe and the United States, for instance, the demand increases as individuals are more concerned about ethical issues, leading to the desire of supporting more environmentally friendly production practices (Keenan et al., 2024; Khaliqi et al., 2023). Generally, consumer interest in organic food is increasing (Diagourtas et al., 2022; Leonidou et al., 2022), with consumers questioning the working conditions of farmers, the origin of products or the way they are produced (Hu et al., 2024). This makes it essential to understand what drives consumers to buy sustainable coffee, whether they perceive the prices as fair and how much they are willing to pay for it (Hu et al., 2024).

Although consumer interest increases and consumer motives for purchasing sustainable coffee, such as health consciousness and environmental concern, are well documented (Lee et al.,

2015), higher prices for sustainable coffee remain a barrier to consumption (Fuller & Grebitus, 2023). This is particularly affected by the current rise in coffee prices (International Coffee Organization, n.d.), due to poor harvests in the previous year (International Coffee Organization, n.d.) and inflation (Statistics Sweden, 2025). This underlines the question whether consumers perceive these higher prices as fair. Studies in related markets like organic food (Kumar et al., 2024) and milk prices (Höhler & Schreiner, 2019) showed that consumers were willing to pay more if prices were perceived as fair, highlighting the important role of price fairness on willingness to pay (WTP). However, this relationship has not been examined in the context of sustainable coffee.

In order to gain a full understanding of this relationship, it is also necessary to examine which factors influence consumer perceptions of price fairness in relation to sustainable coffee (see Gielissen et al., 2008; Bolton et al., 2003). Previous research on consumers' perceptions of price fairness primarily focuses on economic and psychological factors like price comparison to internal and external reference points (Xia et al., 2004). Notwithstanding, moral and ethical considerations are not included, which are particularly important to examine in the context of ethical consumption (Leonidou et al., 2022). Therefore, it remains unexplored what other factors shape consumers' fairness perceptions (see e.g., Bolton et al., 2003; Grimm et al., 2023; Xia et al., 2004), and which factors consumers prioritize when determining whether higher prices for sustainable coffee are considered fair.

Given that price fairness also impacts purchasing decisions in other contexts, examining its role in sustainable coffee can provide valuable insights into promoting sustainable production and consumption. Thus, this study aims to address two research gaps: It investigates (a) the relationship between WTP and perceived price fairness in the unexplored context of sustainable coffee, and more importantly (b) determines additional antecedents that shape consumers' perceptions of price fairness, which focus on moral and ethical considerations. All this leads to the following two research questions:

RQ 1: How does perceived price fairness influence consumers' willingness to pay in the context of sustainable coffee?

RQ 2: What are the antecedents for consumers' perceived price fairness of sustainable coffee?

The findings of this study contribute both theoretically and practically. From a theoretical perspective, existing literature mainly focuses on economic and psychological factors that influence price fairness, e.g., comparison to reference prices (Adams, 1965; Kahneman et al., 1986). This study extends this perspective by incorporating moral and ethical determinants into a new context of ethical consumption. By identifying additional key antecedents and by analyzing the subsequent influence of price fairness on WTP, this study provides new insights into how consumers evaluate price fairness and make purchasing decisions, particularly where social and environmental goals meet profit-oriented goals. From a practical perspective, identifying prices that consumers perceive as fair allows marketers to optimize their pricing models to meet the growing demand for environmentally conscious products, build consumer trust and loyalty, and increase sales of sustainable coffee. Thus, this study highlights the importance of sustainable coffee production practices that benefit both producers and consumers.

To achieve the objectives, existing theory and literature on price fairness and WTP were reviewed to develop hypotheses on the determinants of perceived price fairness and its impact on consumers' WTP. An online survey was conducted with valid responses of 207 Swedish inner-city grocery shoppers who purchase packaged coffee on a regular basis. Following this, the results were analyzed using confirmatory factor analysis and structural equation modeling to test the hypotheses. Based on the results, theoretical and practical implications were discussed along with limitations and directions for future research.

2 Theoretical Framework

2.1 Willingness to Pay

Willingness to pay (WTP) is often equaled with the economic term 'reservation price', which indicates the maximum amount a consumer is willing to pay for a good, or the price at which an individual is indifferent between buying and not buying the product (Tully & Winer, 2014). According to Acquisti and Varian (2005), WTP is shaped by intrinsic factors. These are factors related to the person and influence their valuation, such as their preferences, experiences, and attitudes. In addition, situational factors, e.g., the purpose of the purchase, can change the valuation of a product (He et al., 2024; Thaler, 1985). Consumers also determine their WTP by comparing products in a specific context (He et al., 2024). Context includes factors like available alternative options, available information about the quality of the product or service, as well as the consumers' needs, purchase goals or buying environment. All these factors can have a direct impact on WTP, as the perceived value of the target option varies depending on the context.

WTP is the focus of several studies on sustainable consumption, often examined as a dependent variable (e.g., He et al., 2024; Hu et al., 2024; Ellis et al., 2012). For instance, Ellis et al. (2012) found that consumers were willing to pay a 25% premium for an organic cotton t-shirt compared to a t-shirt made from conventionally produced cotton. The results showed that sustainability can be an important factor in determining consumers' WTP. Furthermore, Tully and Winer (2014) examined the influence of factors on consumers' WTP for socially responsible products in a meta-analysis of over 80 published and unpublished research papers, particularly to understand whether the benefits were directed toward the environment or human welfare. The meta-analysis revealed that on average, consumers were willing to pay a 16.8% premium for socially responsible products, with WTP being higher for products where the socially responsible element benefited humans compared to those that benefited the environment. The findings demonstrated that consumers were willing to pay more for products that supported fair labor practices or human welfare than those who primarily preferred environmentally friendly production.

Additionally, several studies highlighted the importance of environmental benefits to consumers, especially in the food industry. A study by Chen et al. (2024) found that consumers in China were willing to pay more for carbon-labeled beef, showing that consumers were concerned about environmental impact depending on their food choices. More recently, a study by Aweke (2025) conducted a survey with 1021 respondents on WTP of consumers in Norway for organic meat. The study showed that over 45% of participants were willing to pay more for

organic meat, with a belief in the environmental benefits being associated with higher WTP (Aweke, 2025). Similarly, Grimm et al.'s (2023) experiential study on organic rice revealed that consumers were willing to pay on average 20% more for organic rice, supporting the view that consumers' WTP is higher for products that meet their sustainability values. Hence, WTP is not only influenced by intrinsic or situational factors, but also by product-related factors, which makes it an important variable in pricing research.

2.2 Price Fairness

According to Xia et al. (2004), fairness can be defined as "a judgement of whether an outcome and/or the process to reach an outcome are reasonable, acceptable, or just" (p. 1). In the context of price fairness, it involves a comparison of a price with a reference or norm, often referred to as "reference transaction" that provides a benchmark against which prices are assessed and that may include previously established prices, wages or contracts (Kahneman et al., 1986). There are several theories that explain price fairness perceptions (Bolton et al., 2003; Casteran, 2024), most notably the concept of dual entitlement (Kahneman et al., 1986), distributive justice (Homans, 1961) and equity theory (Adams, 1965). Dual entitlement is based on the idea that both the buyer and seller have entitlements and expectations about what is fair in a transaction. In this context, price unfairness arises when entitlements of either the seller or buyer are ignored (Kahneman et al., 1986). The principle of distributive justice postulates that individuals in an exchange relationship are entitled to receive a reward proportional to what they have invested (Homans, 1961). When everyone's profit-to-investment ratio is equal, the exchange is perceived as fair. However, if one party gains more than another, perceptions of unfairness may arise (Homans, 1961). Adams' equity theory (1965) also addresses the perspective of distributive justice by incorporating the role of social comparisons in fairness judgments. Individuals compare their outcomes to those of others. While advantaged inequity, where an individual benefits more than the reference, may be associated with feelings of discomfort or guilt, disadvantaged inequity evokes feelings of unfairness and dissatisfaction (Xia et al., 2004).

For this study, all three theories are relevant to understanding how consumers evaluate the fairness of sustainable coffee prices. While the concept of dual entitlement helps explain whether consumers perceive a higher price as justified, the principle of distributive justice examines the perceived balance between the benefits of the product and the price paid. Adams' equity theory emphasizes the role of social comparisons, suggesting that consumers assess fairness by e.g., comparing sustainable coffee prices with conventional coffee or with prices paid by others.

Perceptions of (un-)fairness are accompanied by cognitions of (in-)equality, and perceived unfairness may result in negative influence on purchase intentions, customer satisfaction and complaints (Campbell, 1999; Xia et al., 2004). There are several negative consequences for both buyer and seller, including negative emotions on the part of consumers such as anger, disappointment or frustration that are usually directed toward the party that is perceived to have caused the "unfair" situation (Xia et al., 2004). Furthermore, buyers may choose to leave the relationship which may even lead to buyers seeking revenge in order to damage the seller and get even (Xia et al., 2004). All these consequences underscore the importance of price fairness perceptions in shaping consumer outcomes, as it can also affect consumers' WTP.

2.3 Relationship between Perception of Price Fairness and WTP

The relationship between fairness perceptions and WTP can be explained by Adam's equity theory (1965), which postulates that consumers assess fairness by comparing the price to the perceived value they receive. When consumers believe that the fair price is proportional to the benefits they gain, such as ethical or environmental production in the context of sustainable coffee, they are more prone to accept higher prices for products and in turn, exhibit higher WTP.

Although the relationship between price fairness and WTP has not yet been studied in relation to sustainable coffee, it is discussed in other product categories. In the context of organic food, Kumar et al. (2024) found that price fairness had an indirect effect on WTP, suggesting that consumers who perceived pricing as fair were more willing to pay higher prices for organic food products if this perception was mediated by factors, such as the desire for environmentally friendly products or trust in certified labels. Similarly, Höhler and Schreiner (2019) investigated how fair milk prices can be achieved despite price fluctuations, providing insights into consumers' perceptions of price fairness. Their experimental study found that consumers who perceived the milk price as fair had a higher WTP, while those who perceived prices as unfair showed a lower WTP.

The relationship between price fairness and WTP has also been explored beyond the food industry. In the context of nature-based tourism, Chung et al. (2011) focused on how perceived fairness of user fees affected tourists' willingness to support and pay fees, showing that tourists were more willing to pay the fees when prices were perceived as fair. Ajzen et al.'s (2000) study on public goods and services confirmed this positive relationship between price fairness and WTP. Furthermore, a study by Xu et al. (2025) on new energy vehicles revealed that consumers were more willing to purchase these when they perceived the pricing as fair. These results emphasize the role of perceived price fairness in shaping WTP. Based on the literature on price fairness, WTP and their relationship, the following first hypothesis was therefore formulated:

> **H1:** Perceived price fairness positively influences consumers' WTP for sustainable coffee.

2.4 Determinants of Perceived Price Fairness

Research across various product categories and industries determined numerous antecedents that shape consumers' perceptions of price fairness (Bolton, 2003; Gielissen et al., 2008). Therefore, it is necessary to consider determinants in this study that may influence price judgments (Höhler & Schreiner, 2019). Table 1 below shows selected articles examining different determinants and their respective findings.

Table 1: Existing research of determinants of Price Fairness

Determinants	Main findings	Methodology	Authors
Price Perceptions	A positive price perception among buyers leads to higher perceived price fairness of a purchase.	Mixed methods	Herrmann et al. (2007)

Brand's Reputation	A brand's reputation positively influences price fairness perceptions.	Experimental study, survey	Campbell (1999); Konuk (2023)
Comparison to Reference Prices	Consumers assess price fairness by comparing it to external and internal reference prices. Price deviations from those reference prices decrease perceptions of price fairness.	Experimental studies, literature review, survey	Bolton et al. (2003); Xia et al. (2004); Gielissen et al. (2008)
Price Transparency	Transparency leads to higher perceived price fairness by clearly communicating pricing structures and price justifications of a product.	Survey, experimental studies, exploratory study	Herrmann et al. (2007) ; Ferguson & Ellen (2013); Nguyen et al. (2015); Bürgin & Wilken (2022); Casteran (2024); Wilken et al. (2024)
Social Purpose	Higher prices are perceived as fairer if a company uses them to pursue social and environmental goals.	Survey	Gielissen et al. (2008); Xu et al. (2025)
Trust	Trust increases perceptions of price fairness. Lack of trust leads to weakened price fairness perceptions and negative responses.	Literature review, survey	Xia et al. (2004); Konuk (2021)

Herrmann et al. (2007) identified price perception as a determinant of price fairness judgments, which generally reflected whether a price seemed reasonable or acceptable. Moreover, a company's brand reputation showed to influence fairness perceptions too, with strong brands positively influencing consumers' perceived price fairness (Campbell, 1999; Konuk, 2023).

However, one of the most frequently reviewed determinants is comparison to reference prices, where consumers assess the fairness of a price by comparing it, for instance, with previous prices, competitors' prices or prices paid by others. Large price deviations from the expected price tend to reduce fairness perceptions (Bolton et al., 2003; Xia et al., 2004; Gielissen et al., 2008). Another relevant determinant is price transparency as it is not only often studied together with price fairness, but also influences price fairness perceptions (e.g., Herrmann et al., 2007; Ferguson & Ellen, 2013; Nguyen et al., 2015). The extent to which prices are communicated transparently and how it affects consumers' price fairness perceptions and WTP is particularly

interesting given the rise in coffee prices (Bryant, 2025; International Coffee Organization, n.d.).

Furthermore, normative antecedents of fairness increasingly gain relevance too, with consumers viewing a price as fairer if they believed the company used it for social or environmental goals (Gielissen et al., 2008; Xu et al., 2025). Based on this, it can be hypothesized that consumers' attitudes and views toward sustainability influence price fairness perceptions and WTP on sustainable coffee, which is relevant to this study as consumers become more ethical and environmentally concerned (Khaliqi et al., 2023; Keenan et al., 2024). Therefore, sustainability attitudes as a determinant are considered as an adapted form of social purpose. Lastly, the determinant trust is extended by applying it to a new context, namely trust in labels related to sustainable coffee, as it was shown that trust increased price fairness perceptions (Konuk, 2021; Xia et al., 2004).

Given the context of sustainable coffee, this study focuses on four determinants to investigate whether they influence how fair consumers perceive the price premium of sustainable coffee: comparison to reference prices, price transparency, sustainability attitudes (as an adapted form of social purpose) and trust in sustainability labels (adapted from general trust). These determinants are particularly important to study as they are grounded in established research but also reflect gaps in recent literature, indicating that determinants such as individual characteristics or consumer knowledge need further examination (e.g., Bolton et al., 2003; Xia et al., 2004; Grimm et al., 2023). Therefore, the following paragraph explores each of the potential determinants in detail and examines their impact on perceived price fairness.

Comparison to Reference Prices

As aforementioned, comparing a product's price with a reference is a substantial part to assess whether the price is perceived as fair or unfair by consumers, with the rule that the actual price needs to be equal to consumers' expected price to be considered a fair price (Kahneman et al., 1986; Xia et al., 2004). Reference prices can be either constructed from current shelf or market prices (external reference price), where individuals directly compare a price with another price (Xia et al., 2004). They can be also be based on remembered past prices (internal reference price), which are prices a consumer expects to find and which rely on the consumer's internal expectations or reference points (Gielissen et al., 2008; Miljkovic & Effertz, 2010; van Oest, 2013). If a current price deviates too much from the reference price without clear justification, consumers perceive it as unfair as they believe to be entitled to the reference price (Gielissen et al., 2008). In the context of sustainable coffee, consumers might compare prices to conventional coffee, which is generally lower priced, or to sustainable coffee, which usually comes at a price premium (Hu et al., 2024). When the reference price is lower, the perceived deviation may be substantial, leading consumers to view sustainable coffee price as unfair. Conversely, when the comparison is made to similarly priced or higher-priced alternatives, the perceived price fairness may increase. In accordance with research on comparative price evaluations (e.g., Xia et al., 2004; Gielissen et al., 2008), it can be assumed that perceived price fairness depends on the reference point consumers used. Therefore, the following hypothesis was proposed:

H2: Comparison to reference prices positively influences price fairness perceptions.

Price Transparency

Research has shown that price transparency, which is defined as disclosing information of how the price of a product or service is composed of, is closely linked to price fairness (Ferguson & Ellen, 2013; Nguyen et al., 2015). It enhances fairness by increasing accountability and reducing information asymmetry, which leads to consumers better assessing if prices are justified (Casteran, 2024). In order for consumers to evaluate the offered price, it is therefore important that marketers explain this process and display the information, which in turn will enhance price transparency and consumers' perceived fairness perception (Herrmann et al., 2007). Miao und Mattila (2007) investigated transparency in the context of online hotel bookings and found that pricing information needed to be useful and clear, in order to influence consumers' price judgments. Casteran (2024) identified a significant mediating effect of price fairness in the relationship between cost transparency and consumers' purchase intention, with additional transparency enhancing perceptions of fairness. This also played a stronger role for ethical products than conventional ones. Similarly, in the context of sustainable product offerings, it was revealed that true cost campaigns and partitioned pricing, which show the entire social and environmental costs of products at the point of purchase and as a separate price component, increased consumers' perceptions of price fairness (Bürgin & Wilken, 2022; Wilken et al., 2024). The process of price transparency was particularly important when prices increased or when the price structure was complex, as it led to buyers accepting price increases more likely and perceiving them as less unfair (Ferguson & Ellen, 2013; Herrmann et al., 2007).

In line with the principle of dual entitlement (Kahneman et al., 1986), consumers expect fair pricing structures that are justified. Therefore, firms that transparently communicate how their prices are composed of facilitate consumers' assessment. This is particularly important in the context of sustainable products, where transparency regarding social and environmental costs can enhance one's perception of price fairness. Hence, the third hypothesis was formulated:

H3: Price transparency positively influences price fairness perceptions.

Sustainability Attitudes

Previous research suggests that sustainability attitudes, defined within this study as both environmental and social concerns of a consumer, are important to consider when it comes to evaluating price fairness and WTP (De Pelsmacker, Driesen, et al., 2005; Hu et al., 2024). Findings showed that consumers with strong environmental concerns and a desire to engage in pro-environmental behavior exhibited a higher WTP for organic food, emphasizing the role of consumer characteristics and environmental attitudes (Hu et al., 2024; Kumar et al., 2024). Additionally, a global survey by Nielsen (2019) reported that 73% of consumers were willing to change their consumption habits to reduce their environmental impact. Similarly, existing literature indicates that social concerns, such as fair labor practices and environmental responsibility, positively influenced purchase intentions for sustainable products (Leonidou et al., 2022; Laos-Espinoza et al., 2024; Lee et al., 2015). In terms of perceptions of corporate fairness, consumers were more likely to consider prices as unfair if they believed a company was making a high profit from them, while they were more likely to accept high profitability if they believed the firm was pursuing socially responsible goals (Gielissen et al., 2008). Thus,

consumers also perceived pricing decisions as fairer when the firm served a social purpose rather than purely increasing profits (Gielissen et al., 2008). In general, literature on WTP states that consumers' WTP increased when consumers were concerned about their environmental (Chen et al., 2024; Grimm et al., 2023; Aweke, 2025) and ethical impact (Tully & Winer, 2014). Therefore, it can be assumed that the way consumers assess the value and justification of a product's price is influenced by consumer attitudes toward sustainability.

In the context of sustainable coffee, Fuller and Grebitus (2023) revealed in their study, which examined consumer preferences and WTP for coffee labels that represented sustainability efforts, that WTP was highest when sustainability labels were present. This indicates that clear and credible sustainability claims can lead to consumer trust and justify the margin for premium pricing of sustainable coffee. Additionally, these findings suggest consumers with strong environmental and ethical concerns to be more prone to pay a premium for sustainable coffee.

Taking all this into account and in line with Adams' equity theory (1965), it can be assumed that consumers with strong positive sustainability attitudes are more likely to perceive premium prices of sustainable coffee as fair because they see added value in the form of environmental and social benefits. Furthermore, consumers who pay more attention to the social and environmental impact of products will accept the added price of sustainable coffee more than consumers who consider it less important, which led to the following hypothesis:

> **H4:** Strong positive sustainability attitudes positively influence price fairness perceptions.

Trust in Labels

Trust is an important factor that influences price fairness (Xia et al., 2004), making it an essential part of sustainability labelling, as it leads to higher purchase and increased WTP (Cook et al., 2023). Research showed that consumers who trust labels were more likely to perceive price premiums as justified. For instance, Pomarici et al. (2018) found that young consumers who trusted labels had a higher WTP for water saving labeled wines. Similarly, Konuk's (2021) study examined the moderating role of private label product type (organic vs non-organic) on the relationships between trust transfer, price fairness, perceived value and brand loyalty. The findings revealed weakened price fairness perceptions when consumers lacked trust in private labels brands. Furthermore, Schollenberg's (2012) study on the impact of Fairtrade labels on the coffee market in Sweden revealed that consumers paid 38% more for a Fairtrade labeled coffee compared to non-labeled coffee, highlighting the important role of trust in sustainability labels. Fuller and Grebitus (2023) further supported these findings, showing that WTP was highest when sustainability labels were present, indicating that clear and credible sustainability claims justify price premiums.

From the perspective of distributive justice (Homans, 1961), which postulates that fairness perceptions arise when consumers feel that the price they pay aligns with the value they receive, higher trust in sustainability labels reinforces the perception that the price premium is justified which leads to a greater acceptance of the price. If consumers trust sustainability labels such as Fairtrade or Rainforest Alliance that aim to signal environmental and social responsibility, they are more inclined to accept price differences. Applying the results of these previous studies to

sustainable coffee, it can be hypothesized that consumers who are familiar with and trust sustainability labels are more willing to accept the price difference of sustainable coffee than consumers who do not trust and pay no attention to the labels. Thus, the subsequent hypothesis arose:

> **H5:** Higher consumer trust in sustainability labels on coffee has a positive impact on perceptions of price fairness.

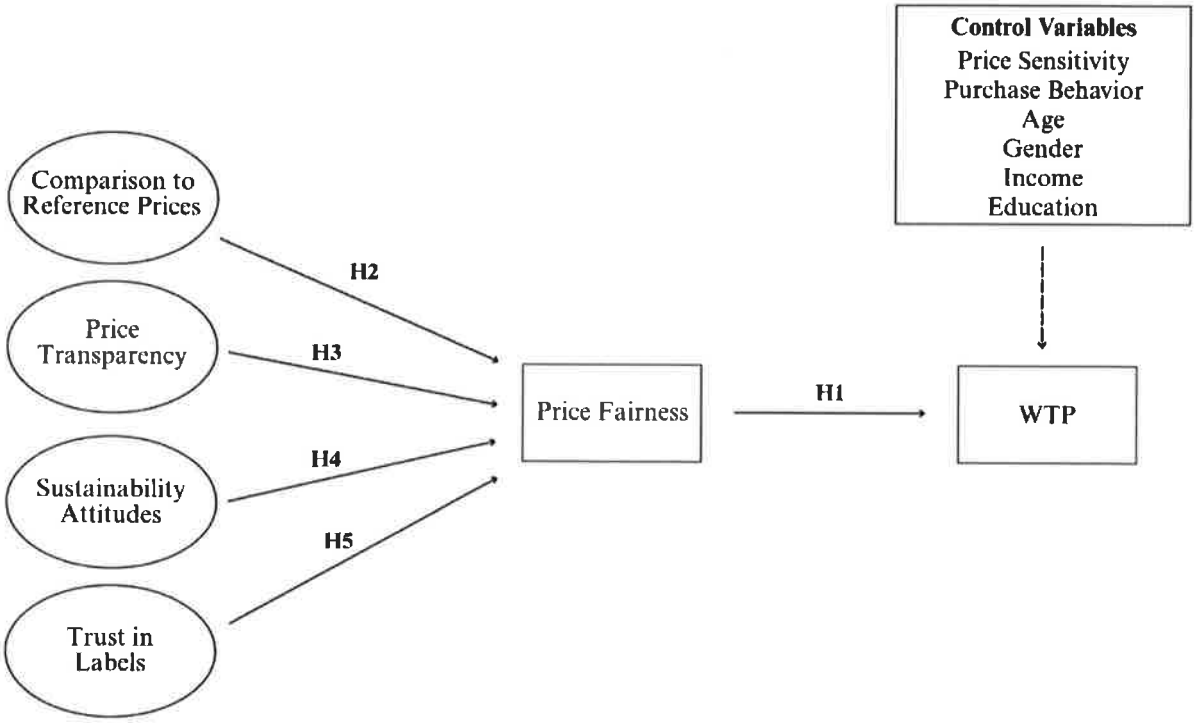
2.5 Control Variables

To control for potential confounding factors, demographic variables, consumer purchasing behavior and price sensitivity were added as control variables. Regarding demographic variables, age, gender, income, and education level were inquired. Previous research suggests that age may play a role in consumers' WTP for sustainable products, with younger generations generally being more willing to pay for products that are sustainably sourced, as younger people are more socially and environmentally conscious than older generations (Bermudez et al., 2022; De Pelsmacker, Driesen, et al., 2005; Pomarici et al., 2018). Additionally, studies found that consumers of fair trade or ethically produced products were inclined to be well-educated and had above average incomes, as these factors are often linked to more awareness and the financial ability to support sustainable consumption (Benson & Connell, 2014).

Price sensitivity can be defined as "the degree to which the consumer focuses exclusively on paying a low price" (Lichtenstein et al., 1993, p. 235). Consumers' sensitivity to prices evidently prevents them from paying extra to buy organic coffee (De Pelsmacker, Janssens, et al., 2005). Price sensitivity may confound the effect of perceived price fairness on WTP, as consumers who are highly price sensitive may be less willing to pay extra for sustainable coffee, regardless of how fair they perceive the price. This is especially interesting to investigate because of the continuous price increases of coffee caused by poor harvests in the previous year and by the uncertainties of the global economy (International Coffee Organization, n.d.), and because general increased cost of living due to inflation may diminish consumers' WTP for coffee (Statistics Sweden, 2025). McDaniel et al.'s (1986) empirical findings support this idea, insinuating that consumers adapt their consumer behavior to the changing economic environment and become more price conscious in times of inflation.

Based on the theoretical framework and the literature review, a conceptual model was derived to serve as the basis for hypothesis testing:

Figure 1: Conceptual model of the antecedents of perceived price fairness and WTP



3 Method

3.1 Data Collection

Data was collected through an online survey from March to April 2025 for three weeks in Gothenburg in Sweden, for which Qualtrics was used to program the questions, and SPSS and STATA to analyze the data.

In order to obtain a broad and diverse sample, which was representative and relevant to the target group of individuals purchasing packaged coffee in retail stores, customers were approached in person in front of Willys, ICA, Hemköp, and Coop supermarkets, which were all centrally located in Gothenburg. Thus, this sample was representative of inner-city shoppers buying packaged coffee. These supermarket chains were selected based on their largest market share in Sweden (Dagligvarukartan, 2024). By choosing a probability sampling approach and using a systematic sample (S. K. Ahmed, 2024), every fifth person was asked by two researchers to participate in the survey. This enabled a random but organized selection of participants and ensured efficient use of time and resources (S. K. Ahmed, 2024). Although systematic sampling carried the risk of bias or over- or under-representation of certain characteristics such as demographics, its structured approach still allowed for generalizable results (S. K. Ahmed, 2024).

A total of 1477 individuals were approached, whereby 700 accepted a flyer with a brief introduction and the QR code to the online survey, while 777 declined. Distributing flyers enabled participants to take the survey without time or local constraints. However, it was not possible to trace whether the flyers were passed on to third parties. Participants only had to fulfill the criterion that they buy coffee themselves in their daily lives, ensuring that the final sample reflected actual coffee consumers. Those who did not meet these requirements were

excluded and could not complete the online survey. Moreover, participants were not able to skip questions within the survey.

Out of 700 distributed flyers, a total of 295 individuals accessed and started the questionnaire. However, only 207 responses were deemed valid and complete after data cleaning, thus, resulting in a response rate of 29.57% based on the number of flyers distributed, and 14.01% based on the total number of individuals approached.

Prior to completing the questionnaire, participants were asked for consent to participate in the study via the statement "I understand that my responses will remain confidential, and I consent to participate in this survey." They were able to withdraw from the survey without any reason and at any time. The survey was available in both English and Swedish, with the Swedish version being translated with the help of Artificial Intelligence (AI) and validated by three Swedish natives independently. The language of the survey could be changed by the participants at any time. Furthermore, it was emphasized throughout the survey that all prices were given in SEK and should be answered in this unit.

3.2 Measures

There are several methods to assess consumers' WTP, and they can be categorized based on actual, respectively simulated price-response data or on surveying techniques (Breidert et al., 2006). WTP obtained from price-responses are referred to as revealed preference data and can be elicited by analyzing market data or by performing experiments. Surveying techniques, which are referred to as stated preference, can be divided into direct and indirect surveys. While direct surveys ask for direct mention of one's WTP, indirect surveys introduce competing product alternatives with their respective prices, and participants are asked for their preference rating or ordering (Breidert et al., 2006). For this study, measuring WTP by directly asking customers how much they are willing to pay for sustainable coffee was the most suitable approach, as it is the most cost effective and time efficient method. Direct customer surveys are also advantageous when a larger set of possible prices needs to be tested, and flexible when product features need to be varied (Breidert et al., 2006). However, this method could result in a lack of incentives for customers to disclose their true WTP, as they might over- or understate prices (Breidert et al., 2006). Specifically, the method designed by Marbeau (1987) was utilized as a direct approach, which elicits the maximum and minimum price a customer is willing to pay for a product, and entails following questions:

1. *"Above which price would you definitely not buy the product, because you can't afford it or because you didn't think it was worth the money?*
2. *Below which price would you say you would not buy the product because you would start to suspect the quality?"*

The Van Westendorp Price Sensitivity Meter (PSM) (1976) expands this questionnaire by including two additional questions on a reasonable cheap price and a reasonable expensive price of the product. These questions cover at which price consumers think the product is expensive but still worth considering, and at which price they would consider it a bargain (Van Westendorp, 1976). The Van Westendorp PSM is particularly valuable for setting initial prices for new products or services that are new to the market (Van Westendorp, 1976). As this is not

the case in this study, and sustainable coffee is already established in the market, the Marbeau method was considered more appropriate to directly measure customers' WTP.

A five-point Likert scale was employed to capture participants' opinions, which ranged from (1) "Strongly disagree" to (5) "Strongly agree", respectively (1) "Very unfair" to (5) "Very fair". In order to ensure content validity, all items and questions were derived from previous studies and existing literature. In addition to eliciting consumers' WTP through the Marbeau method to gather information on participants' average WTP for sustainable coffee, three supplementary questions were asked based on Kumar et al.'s (2024) scale to ascertain participants' attitude and purchase behavior. Perceived price fairness was measured using three items, which were adapted from Konuk (2021). While price comparison composed of questions based on Gielissen et al. (2008) and Benson and Connell (2014), the four items for price transparency derived from Matzler et al. (2007). A combination of questionnaires from Laos-Espinoza et al. (2024), Benson and Connell (2014), Hu et al. (2024) and Kumar et al. (2014) was used in order to retrieve questions that cover environmental and social attitudes when purchasing sustainable products, with four final items included. To measure consumers' trust in labels, four items were developed based on Kumar et al.'s (2024) questionnaire. Finally, price sensitivity was inquired which served as a control variable. The items on price sensitivity were based on Hu et al. (2024). Table A1 in the appendix demonstrates an extended version of the measure of variables and where they were adapted from.

3.3 Questionnaire

Qualtrics' online survey tool was utilized to implement the questions that were developed in the measures section. The survey contained a hypothetical scenario where a new sustainable coffee was presented to consumers that just entered the market. Using hypothetical scenarios is a common approach to measure consumers' WTP of new products or innovations (Schmidt et al., 2024). A picture of the given coffee was created using AI to enhance participants' imagination (see Appendix Figure A2). The questions and the measurement of WTP were further based on this. The product's attributes were defined, as well as the characteristics of sustainable coffee that distinguishes it from conventional coffee for participants to better understand these. The definition of sustainable coffee that was presented at the beginning of the study's introduction served as a reference for the definition used in the inquiry. It was decided to introduce a sustainable coffee product without a brand name to avoid bias (Sansome et al., 2024). Based on the introduction of the hypothetical sustainable coffee package, participants were then asked to elicit their maximum and minimum price they would be willing to pay for the product.

Regarding comparison to reference prices as a determinant for price fairness, reference prices for sustainable and conventional coffee were developed. Therefore, different coffee prices of the Swedish supermarkets ICA, Willys and Coop were considered. ICA, Willys and Coop were chosen, as they have the largest market share on the Swedish market, with ICA accounting for approximately 50% of Swedish supermarkets (Dagligvarukartan, 2024). Based on the market prices in these supermarkets (as of February 2025), the mean value was then calculated for both sustainable and conventional coffee, resulting in an average price of 75 SEK for conventional and 100 SEK for sustainable coffee. Thus, the price for the hypothetical sustainable coffee of

this study was also priced at 100 SEK. Based on these prices, participants were then asked to assess whether they perceived the price of sustainable coffee as fair compared to conventional coffee.

Questions about consumption habits inquired about whether coffee is purchased in supermarkets, and if so, how often. Participants who stated never to buy coffee were excluded from the questionnaire. Further questions covered the determinants of price fairness to be investigated, price fairness itself and WTP. In order to gather data about trust in labels, participants were presented with examples of different sustainability labels to better visualize them, despite the risk of priming effects due to giving concrete examples of sustainability labels. Labels from Fairtrade, Rainforest Alliance and KRAV were used for this purpose, as all three labels claim to adhere to standards regarding both environmental and social issues (Fuller & Grebitus, 2023; Schollenberg, 2012). The Fairtrade label and Rainforest Alliance certification were chosen due to their strong brand awareness (Macdonald, 2020; Valenciano-Salazar et al., 2022), with the Fairtrade label in particular leading to high recognizability among consumers (A. Jones & Williams, 2012). Additionally, the KRAV label was included as it is a Swedish sustainability label representing the organic food market in Sweden (Schollenberg, 2012). Lastly, socio-demographic characteristics like age, gender, income level and education level as well as consumers' price sensitivity in a general manner were inquired.

3.4 Data Analysis

SPSS was used for descriptive statistics, while STATA was chosen for Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM).

First, the data was imported to SPSS where data cleaning was conducted. Out of 295 respondents, 34 stated to never buy packaged coffee, which led to a premature termination of the survey. These cases were deleted from the data set. Furthermore, a missing value analysis was conducted, highlighting 52 surveys answered with more than 50% of missing values, and were therefore removed according to Hair et al. (2019). Another reason for deletion was that the missing data not only affected questions regarding the control variables, but also key constructs essential for the analysis. Furthermore, two additional cases were deleted through the missing data analysis, as they showed a consistent pattern of answers. All other answers were valid and entailed no missing values, as respondents were not allowed to leave questions out of the survey. Therefore, a total of 207 valid cases were included, which provided a robust basis for the following analysis, as a minimum of 200 observations was necessary to adequately analyze SEM (Hair et al., 2019). Lastly, the variables were recoded from text responses to numeric variables (e.g., 1 = Strongly disagree) before being transferred to STATA.

An Exploratory Factor Analysis (EFA) was not necessary to perform, as the measurement model already led to a clear hypothesized model. The factor structure was already provided and based on existing literature and previous studies. Therefore, the conceptual model only considered factors and their respective items which have been studied together and were validated in previous research in similar contexts (e.g., Benson & Connell, 2014; Gielissen et al., 2008; Matzler et al., 2007). While EFA results are based on statistical results, CFA outcomes are based on theory to test if the predefined and theoretically determined structure

represents the actual data (Hair et al., 2019), supporting the view that performing an EFA was not required.

In the next step, CFA was employed to test the model's validity (Hair et al., 2019). Before testing validity, a measurement model showing all constructs, items, and their hypothesized correlations was developed (Hair et al., 2019). Statistical identification was then calculated to see if the model provided enough information which is especially important when deleting items with low loadings (Hair et al., 2019). Finally, the identified model was tested for chi-square and degrees of freedom, *p*-value, root mean square error of approximation (RMSEA), comparative fit index (CFI) and tucker lewis index (TLI), which all gave insights on the model fit (Bagozzi et al., 1991). Furthermore, the model was tested for convergent validity by examining the path estimates and average variance extracted (AVE), whereas composite reliability and Cronbach's alpha were analyzed to assess internal consistency (Hair et al., 2019). To ensure if the constructs were unique constructs and differed from each other, discriminant validity was examined (Hair et al., 2019). Lastly, to investigate whether the model represented the data, nomological and face validity were assessed (Hair et al., 2019). All these offered insights into the model's validity.

Finally, SEM was used to understand the interrelationships between the variables by examining the structure through a series of equations (Hair et al., 2019). SEM was particularly important in this study to test the fit of the model and to comprehend the linkages of the variables. Therefore, the CFA model was changed to a structural model with structural relationships and an endogenous construct (Hair et al., 2019). To assess the structural model validity, goodness-of-fit as well as badness-of-fit statistics were analyzed. Hypotheses were tested by examining the level of significance (*p*-value) of the structural paths. Although a commonly used value for significance level is 0.05, higher values of 0.10 were accepted in this study, as confidence intervals and significance levels are also based on the research context and objectives of the study. Even though this allows a higher risk of error, it also makes it easier to conclude that the coefficient is different from zero. Therefore, accepting hypotheses at a *p*-value of 0.10 may be used in certain situations where researchers are willing to accept the slightly higher risk (Cumming, 2011; Hair et al., 2019). Finally, all results were interpreted based on the theoretical framework, and the proposed hypotheses either accepted or rejected based on the respective *p*-values of the relationships.

4 Results

4.1 Descriptive Results

The descriptive results revealed that with 51.7%, the majority of the participants were female, and the average age of respondents amounted to 36.56 years, with the youngest participant being 16 and the oldest 80 years old. In terms of income, 32.9% of participants reported a monthly income of less than 20,000 SEK, which could indicate that most of the participants were either students, unemployed or seeking work. This is particularly notable, as the education levels of the respondents were relatively high, with 31.9% holding a bachelor's degree and 35.3% holding a master's degree. In comparison to national data from Statistics Sweden (SCB), only 24.1% of Swedish citizens had a post-secondary education of three years in 2023 (Statistics

Sweden, 2024), equivalent to a Bachelor's degree. The second most common type of education completed in Sweden in 2023 was three years of upper secondary education, with 23.93%, stating that they completed high school or equivalent (Statistics Sweden, 2024). This discrepancy suggests that the sample in this study obtained higher education levels than the general Swedish population. One reason for this could be that the supermarkets that were chosen to gather data were all centrally located in Gothenburg and in proximity to university buildings and upper secondary schools. Table 2 provides an extended overview of the demographic characteristics of the sample as well as the distribution of participants' coffee consumption habits.

Table 2: Demographic results of the sample

Measure	Item	N	%
Gender	Female	107	51.7%
	Male	92	44.4%
	Non-binary/Third gender	4	1.9%
	Prefer not to say	4	1.9%
Age	Under 18	2	1.0%
	18 – 24 years	39	18.8%
	25 – 34 years	80	38.6%
	35 – 44 years	26	12.6%
	45 – 54 years	27	13.0 %
	55 – 64 years	20	9.7%
	65 years and older	13	6.5%
Monthly income (before taxes)	Less than 20,000 SEK	68	32.9%
	20,000 SEK – 30,000 SEK	20	9.7%
	30,001 SEK – 40,000 SEK	35	16.9%
	40,001 SEK – 50,000 SEK	33	15.9%
	50,001 SEK – 60,000 SEK	23	11.1%
	60,001 SEK – 70,000 SEK	14	6.8%
	70,001 SEK – 80,000 SEK	2	1.0%
	More than 80,000 SEK	12	5.8%
Education	Less than high school education	2	1.0%
	High school or equivalent	38	18.4%
	Vocational education (e.g., apprenticeship, trade school)	19	9.2%
	Bachelor's degree or equivalent	66	31.9%
	Master's degree or equivalent	73	35.3%
	PhD or equivalent	9	4.3%
Consumption Habits	Less than once every 3 months	33	15.9%
	Every 1-2 months	55	26.6%
	Once a month	50	24.2%
	Every 2-3 weeks	53	25.6%
	Once a week	14	6.8%
	Multiple times a week	2	1.0%

Regarding participants' consumption habits, the majority of participants stated to consume packaged coffee at least once every 1-2 months (26.6%), followed by consumers buying it every 2-3 weeks (25.6%), and consumers buying it once a month (24.2%). A smaller amount purchased packaged coffee weekly (6.8%) or multiple times a week (1.0%), while 15.9% of the sample reported consuming it less than every three months. The sample represented regular purchasers of packaged coffee, which also reflected the habits of Swedish coffee consumers, as 77% of Swedes stated to drink at least one cup of coffee per day (*Kafferapporten 2025*, 2025).

Regarding the direct measurement of WTP, participants stated that on average, the highest amount they were willing to pay for sustainable coffee before thinking it was too expensive was 159,44 SEK/500g. Conversely, they would start questioning the quality of the product priced below 82,62 SEK/500g on average. These results indicated a strong willingness to pay for sustainable coffee alternatives among respondents, as the prices exceeded the average market price of conventional coffee in Sweden at around 75 SEK/500g as of February 2025. However, it should be noted that the average Swedish market prices for coffee rose considerably since then (Bryant, 2025). For instance, in many Swedish supermarkets, such as Coop or Hemköp, the 500g package of conventional coffee now commonly costs around 100 SEK, and further price increases of up to 25 SEK per package are expected (Bryant, 2025). Similarly, Matpriskollen (2025), an independent Swedish food price organization, reported a 19% increase in coffee prices between the period from April 2024 to April 2025.

4.2 CFA

To assess the quality and validity of the theoretical measurement model (Hair et al., 2019), a CFA was performed. The proposed theoretical model included five latent constructs, namely price comparison (PC), price transparency (PT), sustainability attitudes (SA), trust in labels (Labels), and price fairness (PF), which were measured by 18 indicators in total.

However, when testing the proposed measurement model, the path estimates revealed that one item for price comparison ("I would only buy sustainable coffee if its price is similar to conventional coffee.") showed a low factor loading below the cut-off value (< 0.5) (Hair et al., 2019). The low performance of this item could be due to the position of the item in the survey as it was asked immediately after the statement comparing two prices for sustainable coffee ("In most supermarkets, the price of sustainable coffee is on average 100 SEK/500g. The price of this sustainable coffee is also on average 100 SEK/500g. How fair do you perceive the price of this sustainable coffee?"). This placement may have influenced the respondents' interpretation or answers to the following item. Albeit this item being theoretically relevant, it was deleted and not included in the analysis due to a poor model fit, affecting reliability and validity. As a result, the modified model consisted of five latent constructs and 17 indicators (see the full CFA model in Appendix Figure A1). As only one item was deleted, the modified model was still overidentified, meaning that enough information of the model was provided to test the model fit (Hair et al., 2019).

In the following step, the model fit was evaluated which is presented at the bottom of Table 3. The modification indices revealed an improvement of the model fit by allowing two measurement errors for trust in labels to correlate. However, according to Fornell (1983) and

Gerbing and Anderson (1984), this should only be considered if it is theoretically and methodological justified. In this case, correlating Labels3 ("Sustainability labels on coffee are credible and honest.") and Labels4 ("I believe that organizations that certify sustainable coffee are independent organizations and not influenced by external interests.") was justified, as previous research showed that consumers did not identify labels and independent organizations as separate (Gorton et al., 2021). Moreover, both statements query the concept of trust and were adopted from the same context, namely organic food (Konuk, 2021; Kumar et al., 2024). Accordingly, the two measurement errors were correlated, which improved the normed chi-square from 1.865 to 1.694, which should be preferably below 3 (Hair et al., 2019). Other indices, such as RMSEA (0.058), CFI (0.959) and TLI (0.948) improved as well and supported an overall good model fit, as all values were below or above the respective thresholds. All this indicated that the modified model was a good representation of the data.

Furthermore, all standardized factor loadings ranged from 0.57 to 0.91 and were therefore above the cut-off value of 0.5. Of these standardized factor loadings, eleven items even exceeded the even more ideal threshold of 0.7, showing that the indicators were strongly related to their constructs (Hair et al., 2019). Nevertheless, all indicators above 0.5 were kept. The associated *t*-values ranged from 9.30 up to 53.68 and were all statistically significant ($p < 0.001$), supporting convergent validity.

The AVE for the constructs price comparison, sustainability attitudes, trust in labels and price fairness were all above the threshold value of 0.5 (Hair et al., 2019). However, the AVE for price transparency (0.408) was below the threshold value, indicating that the factor did not explain enough of the items. However, removing PT4, the item with the lowest standardized factor loading (0.57), did not cause price transparency to exceed the AVE's threshold of 0.5. As the threshold value of 0.5 is a rule of thumb (Hair et al, 2019) and the construct was theoretically and empirically supported and relevant, it was decided to retain the whole construct, including PT4. Furthermore, with Cronbach's alpha ranging from 0.728 to 0.926, all constructs had an acceptable internal consistency. Further evidence of internal consistency is provided by the composite reliability values for all constructs. Here, all values clearly exceeded the given threshold of 0.6 (Bagozzi & Yi, 1988), which confirmed internal consistency of the model (see Table 3). Although the AVE was lower for price transparency, all other statistics were acceptable, leading to the conclusion that convergent validity was given.

Table 3: Results of CFA based on the modified measurement model

Constructs and indicators	Std. factor loadings	*t*-value	Composite reliability	Cronbach's alpha	Average variance extracted
Price Comparison			0.837	0.837	0.720
PC1	0.83	24.18			
PC2	0.87	26.36			
Price Transparency			0.732	0.728	0.408
PT1	0.60	10.21			
PT2	0.68	12.67			

PT3	0.70	13.20			
PT4	0.57	9.30			
Sustainability Attitudes			0.851	0.840	0.593
SA1	0.68	15.48			
SA2	0.79	24.32			
SA3	0.91	37.08			
SA4	0.67	15.67			
Trust in Labels			0.851	0.855	0.593
Labels1	0.86	30.06			
Labels2	0.82	25.18			
Labels3	0.79	23.68			
Labels4	0.58	10.79			
Price Fairness			0.926	0.926	0.807
PF1	0.90	50.00			
PF2	0.91	53.68			
PF3	0.89	47.50			

Note: Goodness-of-fit: χ^2 (108 df) = 182.976, p = 0.000, RMSEA = 0.058, CFI = 0.959, TLI = 0.948.

To test the model for discriminant validity, the AVE of any two constructs (displayed in Table 3) must be higher than their associated square of correlations (displayed in Table 4) (Hair et al., 2019). For this model, all AVE were higher than the squared correlations, e.g., the AVE for price comparison was at 0.720 and at 0.408 for price transparency. With a squared correlation of 0.001, it could be confirmed that the AVE for these two constructs was higher than their squared correlation, showing that price comparison and price transparency were unique and did not measure the same (Hair et al., 2019). As all squared correlations were below the respective AVE, it could be concluded that discriminant validity was given for all constructs.

Table 4: Squared correlations matrix of the constructs

	1	2	3	4	5
1. Price Comparison	-				
2. Price Transparency	0.001	-			
3. Sustainability Attitudes	0.012	0.230	-		
4. Trust in Labels	0.137	0.096	0.152	-	
5. Price Fairness	0.563	0.002	0.044	0.168	-

Furthermore, nomological validity and face validity are important criteria for validity testing (Hair et al., 2019). In this study, nomological validity was given, as the correlations of the constructs were not only meaningful, but also consistent with the given theoretical framework and its predictions. As the survey questions were adopted from other authors of similar contexts (see Appendix Table A1), and only adapted for the context of sustainable coffee, it could be concluded that face validity was given as well.

4.3 SEM

In order to test the conceptual model proposed in the theoretical framework (Hair et al., 2019), SEM was performed. For this model, the latent dependent variable WTP, as well as the six control variables were added. The χ^2 for the proposed model was 647.555 with 327 degrees of freedom. The chi-square divided by the degrees of freedom resulted in 1.980, which was below the recommended threshold of 3. Although χ^2 was statistically significant, which indicated a deviation between the model and the observed data, it did not necessarily show evidence of a poor model fit. This is due to the fact that, according to Fornell and Larcker (1981), the chi-square is highly sensitive to sample size and model complexity, which often leads to the rejection of acceptable models. For this reason, other goodness of fit and badness of fit indices were considered, including RMSEA, CFI, and TLI (Hair et al., 2019). The RMSEA value was 0.069, within the level of 0.08 (Hair et al., 2019). However, CFI and TLI had values at 0.875 and 0.859, resulting in an unattainable threshold of 0.90 (Bollen, 1989). In addition, the value of the Standardized Root Mean Residual (SRMR) at 0.116 suggested a problem with the model fit, as it was above 0.10 (Hair et al., 2019).

To improve the model's fit, a modification index was calculated. Estimating a modification index for this model proposed a direct link between sustainability attitudes and WTP, as well as between price transparency and WTP, since these modification indices exceeded the cut-off value of 4.0 by a margin. Therefore, direct relationships between these two variables and WTP were added, as previous research supported these relationships, with strong sustainability attitudes exhibiting a higher WTP for ethical products, and price transparency reducing uncertainty and influencing purchase decisions (e.g., Hu et al., 2024; Kumar et al., 2024; Grimm et al., 2023). The chi-square decreased to 509.366, respectively degrees of freedom to 325, leading to an improved normed chi-square of 1.567. Other statistics improved as well by adding these direct relationships, such as RMSEA (0.052), CFI (0.928) and TLI (0.919). CFI and TLI now exceeded the cut-off value of 0.90 (Bollen, 1989), as well as SRMR kept under 0.10 at 0.08 (Hair et al., 2019). These results concluded a good fit of the theoretical model and the data, which was improved by adding direct paths between sustainability attitudes and price transparency to WTP. As the modified model indicated better Goodness-of-fit indices, it was continued with this one. Table 5 shows the Goodness-of-fit indices for both the proposed model and the modified model, which draws a direct link between sustainability attitudes and WTP and price transparency and WTP.

Table 5: Goodness-of-fit test for the structured models

	The proposed model (Fig. 2a)	The modified model (Fig. 2b)
Chi-square (χ^2)	647.555	509.366
Degrees of freedom (df)	327	325
P > Chi^2	0.000	0.000
RMSEA	0.069	0.052
CFI	0.875	0.928
TLI	0.859	0.919
SRMR	0.116	0.080

Based on the results of the modified model, hypothesis 1 was supported by the data (see table 6), which predicted that prices of sustainable coffee that were perceived as fair positively influenced consumers' WTP, i.e. the fairer a price was perceived, the higher a participant's WTP ($\beta = 0.194$, $t = 3.54$, $p < 0.001$). Regarding the determinants of perceived price fairness, price comparison showed the strongest effect on price fairness ($\beta = 0.694$, $t = 13.29$). The strong positive coefficient that was significant at a 99% confidence level suggested that consumers who actively compared prices to other sustainable coffee or alternatives, were more likely to perceive prices of sustainable coffee as fair. For this reason, hypothesis 2 was accepted.

The hypothesized effect of price transparency on perceived price fairness was not supported by the data. The relationship was slightly negative ($\beta = - 0.077$), but statistically non-significant ($p = 0.311$), showing that, within this sample, price transparency may not play a meaningful role in shaping price fairness perceptions in the context of sustainable coffee. Furthermore, the direct path from price transparency to WTP was statistically non-significant ($t = 1.47$, $p > 0.10$) as well. For this reason, the third hypothesis, which hypothesized that price transparency positively influences price fairness, was rejected.

Sustainability attitudes had a significant positive influence on perceived price fairness ($\beta = 0.119$, $p = 0.093$) at a 90% confidence level. Furthermore, the direct path from sustainability attitudes to WTP derived from the modified model was found to be highly significant and to have a strong effect on WTP ($\beta = 0.693$, $p < 0.001$). This indicated that sustainability attitudes not only influenced WTP indirectly through perceived price fairness, but also had a strong direct effect on consumers' WTP. Thus, participants with stronger sustainability values were more likely to pay a premium for sustainable coffee, which was partially mediated by price fairness. Specifically, stronger sustainability attitudes positively influenced perceived price fairness, which in turn increased consumers' WTP for sustainable coffee, as well as strong sustainability attitudes influencing their WTP directly. Therefore, hypothesis 4 was accepted.

The acceptance of the hypothesis also applied to the hypothesized relationship between trust in sustainability-related coffee labels and price fairness: The path coefficient was slightly positive ($\beta = 0.131$), and the relationship was statistically significant at a 90% confidence level ($t = 1.84$, $p = 0.066$). This result showed that, within this sample, trust in sustainability labels, such as Fairtrade, Rainforest Alliance or the Swedish label KRAV, was a factor in determining whether consumers perceived sustainable coffee prices as fair or not, which is why the last hypothesis was accepted as well.

Table 6: Analysis of proposed hypotheses

Hypotheses	Acceptance/Rejection of Hypotheses	Level of Significance (Sig.)
H1: Perceived price fairness positively influences consumers' WTP for sustainable coffee.	Accepted	$p < 0.001$
H2: Comparison to reference prices positively influences price fairness perceptions.	Accepted	$p < 0.001$

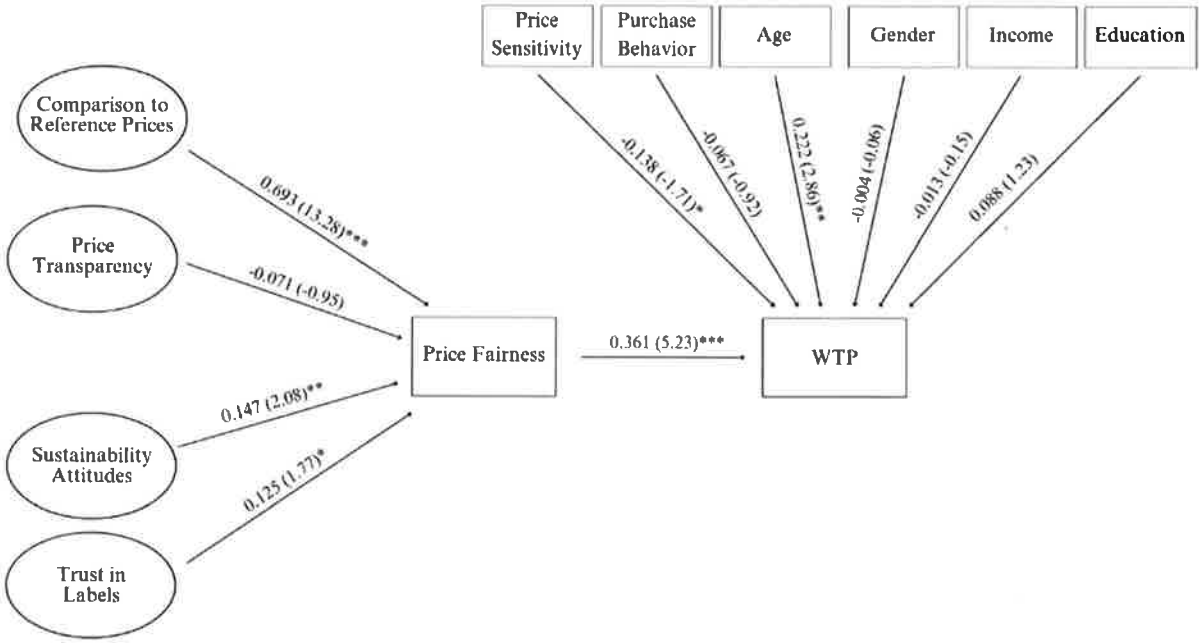
H3: Price transparency positively influences price fairness perceptions.	Rejected	$p = 0.311$
H4: Strong positive sustainability attitudes positively influence price fairness perceptions.	Accepted	$p = 0.093$
H5: Higher consumer trust in sustainability labels on coffee has a positive impact on perceptions of price fairness.	Accepted	$p = 0.066$

Regarding the control variables, only age and price sensitivity had a significant effect on WTP. The positive and significant β-coefficient of 0.149 of age indicated that, controlling for other factors, the higher the consumer's age, the higher their WTP for sustainable coffee ($t = 2.60$, $p = 0.009$). In addition, a negative relationship between price sensitivity and WTP was observed ($\beta = -0.206$). This suggests that consumers who were highly price sensitive had a lower WTP for sustainable coffee, holding all other variables in the model constant ($t = -3.61$, $p < 0.001$). Notwithstanding, consumers' purchase behavior of coffee, gender, income and education level did not show a significant impact on consumers' WTP.

Finally, the explained variance (R^2) for the two latent constructs of price fairness and WTP was examined. Overall, the modified model explained 71.9% of the variance in WTP ($R^2 = 0.719$), which showed that the predictors of the model were effective in capturing the factors that influenced consumers' WTP for sustainable coffee. Compared to the explained variance in WTP of the proposed model ($R^2 = 0.202$), the variance for the modified model grew substantially, i.e., the direct and significant relationship between sustainability attitudes and WTP accounted for a considerable amount of the explained variance. For price fairness, 60.0% of the variance was explained by the latent variables price comparison, price transparency, sustainability attitudes and trust in labels ($R^2 = 0.600$). The model's explained variance in price fairness indicated a moderate explanatory power and suggested that while the included antecedents accounted for a substantial portion of consumers' perceived price fairness, some variance remained unexplained due to other external factors, such as a brand's reputation or price perceptions, that were not considered in the conceptual model (see Table 1).

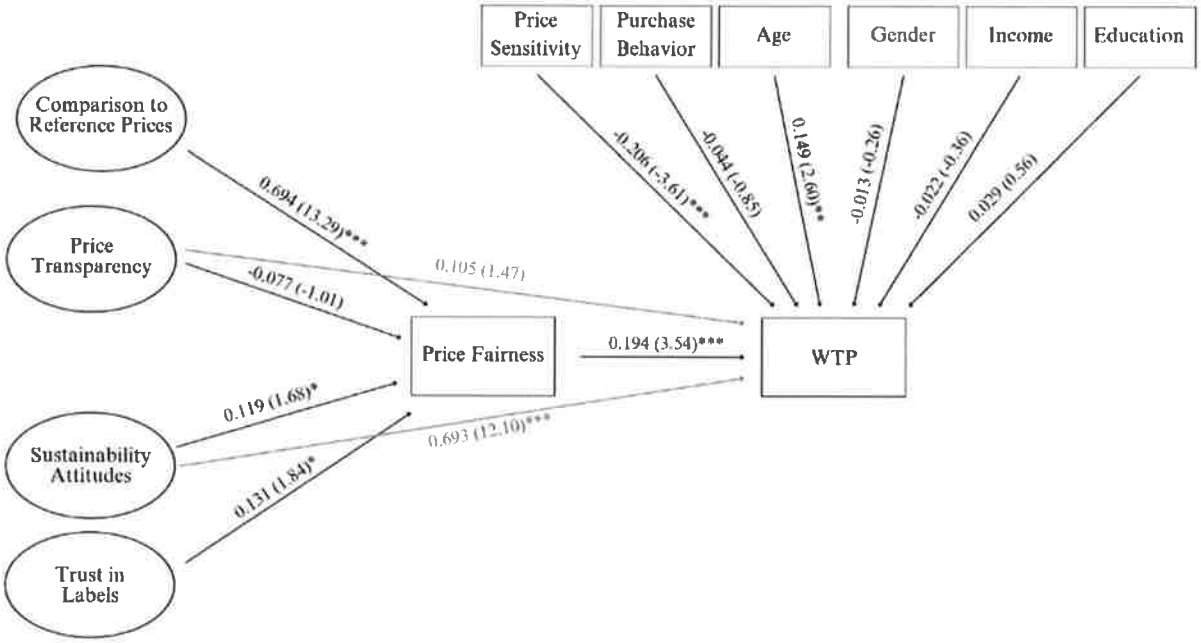
To summarize, the data of the modified SEM model supported both hypotheses 1 and 2, as well as hypotheses 4 and 5, revealing a positive correlation for each variable on price fairness, as well as a positive influence of price fairness on WTP. However, the hypothesized positive effect of price transparency was not supported by the findings, resulting in a rejection for the third hypothesis. Figure 2a and 2b display the proposed and modified model with the respective coefficients and *t*-values for each path.

Figure 2a: Results of the proposed model



Note: $*p < 0.10$, $**p < 0.05$, $***p < 0.001$. R^2 of WTP = 0.202, R^2 of Price Fairness = 0.606. *t*-values in brackets.

Figure 2b: Results of the modified model



Note: $*p < 0.10$, $**p < 0.05$, $***p < 0.001$. R^2 of WTP = 0.719, R^2 of Price Fairness = 0.600. *t*-values in brackets.

5 Discussion & Conclusion

This study provided empirical findings on how different predictors, covering moral and ethical considerations, influenced consumers' perceived price fairness of sustainably sourced coffee, and how this, in turn, impacted their WTP. A CFA was conducted to validate the proposed theoretical measurement model, whereas the strength and direction of the direct and indirect relationships between the variables were predicted based on the SEM results.

To address the research questions *"How does perceived price fairness influence consumers' willingness to pay in the context of sustainable coffee?"* and *"What are the antecedents for consumers' perceived price fairness of sustainable coffee?"*, the findings revealed that price fairness significantly and positively influenced consumers' WTP. Similarly, price comparisons, trust in labels and strong positive attitudes toward sustainability proved to be important predictors in explaining whether consumers perceive prices of sustainable coffee to be fair or not. However, price transparency showed no significant impact.

The positive impact of price fairness on consumers' WTP was one important and to be expected finding of the study, as proposed by Höhler and Schneider (2019) and Kumar et al. (2024). This also aligned with results by Ajzen et al. (2000) who observed that the degree of fairness and the subjective value had a significant contribution to the prediction of WTP of public goods. However, the effect within this study ($\beta = 0.194$, $p < 0.001$) was smaller compared to findings ($\beta = 0.747$, $p < 0.001$) in the context of new energy vehicles by Xu et al. (2025). This could be explained by different product categories: While vehicles are considered as high-involvement products tied to higher risks (Z. Ahmed et al., 2004; Arora & Singh, 2024), coffee is seen as a low-involvement product associated with little risk and habitual purchases (Z. Ahmed et al., 2004). Thus, consumers might evaluate price fairness as more important when making more thoughtful decisions, such as purchasing a new energy vehicle (Chandrashekaran, 2012; Xu et al., 2025).

In this study, price comparison accounted for the most important and most significant effect on price fairness ($\beta = 0.694$, $p < 0.001$). This result aligned with previous research that postulated that consumers compared prices with external and internal reference prices, e.g., past prices or prices of other sellers, and thus, perceived prices as unfair if they deviated too much from their reference prices. One explanation for the strong impact of price comparisons could be that in various studies, price was seen as an easily observable and quantifiable factor for consumers (De Pelsmacker, Driesen, et al., 2005; Fuller & Grebitus, 2023; Hu et al., 2024). In contrast to more abstract factors (e.g., sustainability attitudes), price offers the opportunity for direct comparison, which is why it could be more relevant to consumers when assessing price fairness.

Initially, it was assumed that disclosing information of how the price of a product or service is set enhances consumers' perceived price fairness, as it diminishes information asymmetry and increases a firm's accountability (Casteran, 2024). However, no evidence was found in this study that indicated an impact of price transparency on price fairness, which did not align with results of current research (Bürgin & Wilken, 2022; Ferguson & Ellen, 2013; Herrmann et al., 2007). In this study, merely displaying the pricing information was not sufficient to enhance fairness perceptions or WTP, leading to the rejection of the third hypothesis. This could indicate that price transparency was not as relevant for consumers as other factors, such as comparison to reference prices, showing that relative pricing is more important for fairness than transparency itself. Instead, these efforts may need to be paired with other measures to be perceived as meaningful and fair. For instance, a study on healthcare by Whaley et al. (2019) revealed that if price transparency was combined with reference prices, consumers often opted for cheaper providers or locations that offered the same service. Moreover, as no evidence was found in this study, but reported in other studies (Bürgin & Wilken, 2022; Herrmann et al., 2007), it could be concluded that the context of the study is relevant, meaning that the results

are not applicable to all contexts. While Hermann et al. (2007) examined the automobile context and Bürgin and Wilken (2022) examined Fairtrade chocolate and bananas, this study focused specifically on sustainable coffee. The different results could be also explained by using different research methods. While Bürgin and Wilken (2022) applied an experimental approach, the results of this study were based on an online survey, suggesting that price transparency could be a more important factor when exposed to it experimentally. Lastly, cultural and market-specific factors could play a role as well. As this study focused on the Swedish market, where consumers evidently report high trust in public institutions (OECD, 2024) as well as in consumer authorities, including consumer laws (Berg, 2022), consumers might already expect transparent pricing or rely on sustainability labels when it comes to assessing price fairness, as this study showed a significant effect for trust in labels.

The modified model proved a highly positive and significant relationship between sustainability attitudes and WTP. This relationship can be also explained based on previous research: For instance, it was found that consumers with strong environmental concerns and who engaged in pro-environmental behavior exhibited higher WTP for organic food (Hu et al., 2024; Kumar et al., 2024). Other existing literature accentuated this relationship, stating that WTP increased when consumers were concerned about the product's environmental and ethical impact (Chen et al., 2024; Grimm et al., 2023; Tully & Winer, 2014). Theoretically, it could be hypothesized that perceived price fairness increases, as consumers with strong sustainability attitudes see added value in the form of social and environmental benefits (Adams, 1965). Therefore, drawing a direct path between these two variables was justified. Notably, the direct relationship between sustainability attitudes and WTP represented a higher coefficient ($\beta = 0.693$) than to price fairness ($\beta = 0.119$), and from price fairness to WTP ($\beta = 0.194$). These results indicated that consumers with strong sustainability attitudes were more willing to pay for sustainable coffee, even without considering whether the price was fair or not, whereas price fairness partially mediated the relationship between sustainability attitudes and WTP. In conclusion, consumers' attitudes toward sustainability directly increased their WTP, and their perception of price fairness strengthened this willingness, and vice versa.

A direct path from price transparency to WTP was suggested as well, which was also justified based on previous research. In line with findings from Miao and Mattila (2007), price information that was presented with high transparency exhibited a greater perceived price fairness as well as WTP. Thus, high price transparency on the part of the seller reduces uncertainty, which in turn can directly enhance WTP. Albeit the direct path from price transparency to WTP, the effect was not statistically significant within this sample, insinuating that transparency may not be sufficient on its own to significantly increase purchasers' WTP. This could indicate that the transparency of the price itself is not a decisive factor in consumers' willingness to pay more for sustainable coffee.

Finally, regarding the control variables, only age and price sensitivity exhibited a statistically significant effect. Contrary to previous studies that showed younger generations to be more willing to pay for sustainably sourced products (Bermudez et al., 2022; De Pelsmacker, Driesen, et al., 2005), age, however, had a positive coefficient in this analysis, indicating that older consumers were more inclined to exhibit a greater WTP for sustainable coffee compared to younger consumers. However, this result could not be linked to a higher disposable income

among older people, as income as a control variable did not yield a significant impact on WTP. Nevertheless, older consumers might be still in a more stable financial situation than younger consumers as they might have fewer debts or more savings, which could explain a higher WTP. In addition, differences in consumers' WTP may also be influenced by other factors, such as buyers' habitual purchase behavior of specific coffee brands or a greater interest in coffee, suggesting that additional relationships, which were not examined in this study, could explain different results.

In contrast, price sensitivity exhibited a small and negative effect on WTP at a 99% confidence level, which aligned with existing research that highly sensitive consumers were less willing to pay extra for sustainable coffee, regardless of how fair they perceived the price (De Pelsmacker, Janssens, et al., 2005). As inflation in Sweden rose in the past years, with the inflation rate peaking at 9.7% in September 2022 (Statistics Sweden, 2025), it becomes evident that these drastic economic changes induce consumers to become more price conscious and to take more care and planning in their food buying behavior (McDaniel et al., 1986).

Despite the continuous increase of coffee prices (*Matpriskollen*, 2025) and consumers becoming more price conscious in times of inflation (McDaniel et al., 1986), coffee as one of the most popular and habitually consumed beverages (Ridder, 2024) may explain why consumers continue to accept higher coffee prices. For many consumers, coffee is embedded in their daily routine (Freitas et al., 2024; Ridder, 2024), whereby caffeine can lead to a certain dependency, with withdrawal side effects like headaches often reported (Alqawasmi et al., 2024). These factors emphasize the important role of coffee in consumer behavior. Furthermore, as coffee prices continue to rise, consumer's internal reference price might also adjust accordingly (Gielissen et al., 2008; Miljkovic & Effertz, 2010; van Oest, 2013), shifting the threshold of what is considered to be a fair price. All this leads to the assumption that consumers would rather accept higher coffee prices than stop consuming coffee. However, this could lead to consumers switching from sustainable coffee to conventional coffee, as Hainmueller et al.'s (2015) experiment showed that consumers were more willing to accept price increases of sustainable coffee in the upper price segment than for price increases for sustainable coffee in the lower price segment.

In summary, the study confirmed the central role of perceived price fairness in shaping consumers' WTP, while highlighting active comparison to reference prices, strong sustainability attitudes, and trust in labels as significant antecedents of fairness judgments when assessing prices for sustainable coffee. These results provide a foundation for the following discussion on the study's theoretical contributions and practical implications for marketers.

5.1 Theoretical Implications

This study contributes to the existing theory in the context of price fairness judgments. Concepts like dual entitlement , which explains that both the buyer and seller have entitlements and expectations about what is fair in a transaction, or distributive justice (Homans, 1961), which posits that individuals are entitled to receive a reward proportional to what they have invested, primarily focus on economic comparisons of prices and psychological expectations leading to one's individual perceived price fairness. Building on this, this study extends this view by

including moral and ethical consideration like consumers' sustainability attitudes and trust in sustainability labels that evidently serve as additional predictors of perceived price fairness. This is particularly relevant to examine in the context of a growing tendency of ethical consumption and the increasing market of sustainably sourced products (Ethical Markets Report 2022, n.d.).

The empirical findings support this thesis, demonstrating that ethical motives and values, namely trust in sustainability labels and one's attitude toward sustainability, also play a determining role in evaluating the fairness of a price, particularly in the context of sustainable coffee. Furthermore, the findings complement existing literature concerning the relationship between price fairness and WTP, as proposed by Ajzen et al. (2000), Xu et al. (2025), Höhler and Schreiner (2019) and Kumar et al. (2024). While it was verified that price fairness had a significant effect on WTP, it was also discovered that sustainability attitudes exerted an even greater impact on WTP, offering a more differentiated understanding of how moral assessments shape consumer behavior. This suggests that in the context of sustainable consumption, one's values and views toward sustainability outweigh traditional price fairness assessments. Consumers may still pay the price premium for sustainable products even if it is not economically justified, but because the product's environmental and social standards align with their beliefs and moral concepts (Chen et al., 2024; Grimm et al., 2023; Tully & Winer, 2014).

Thus, this study challenges the traditional view of price fairness judgments, as it suggests that consumers also rely on factors related to their own values and beliefs. Particularly in product categories with strong environmental and social implications, one's fairness perceptions may be shaped by the extent that a price reflects environmental and social components. This proposes the need for existing fairness theory to be expanded by value-based and moral antecedents that consumers also use in assessing a price's fairness.

Finally, the strong direct effect of sustainability attitudes on WTP independent of price fairness also suggests a refinement of existing fairness theory models. Consumers with strong sustainability attitudes may still accept prices that feel unfair from a traditional perspective because supporting the product aligns with their values and moral concepts. Therefore, price fairness models within the context of ethical consumption need to consider the mediating effect of sustainability attitudes on price fairness and WTP.

5.2 Practical Implications

The findings of this research also hold several practical implications for marketers and firms when it comes to determining pricing and communication strategies for sustainable products. First, as price comparison was deemed to be the most influential factor in determining consumers' price fairness perceptions, marketers should clearly position sustainable coffee alongside other premium and higher-priced coffee in retail settings. This way, instead of allowing consumers to directly compare sustainable coffee to conventional, lower-priced options, the anchoring approach of positioning it next to other premium products exhibits a higher external reference price (Sinha & Adhikari, 2017; van Oest, 2013), and thus, a higher acceptance of the price margin of sustainable coffee compared to conventional coffee among purchasers.

Second, a pricing strategy that could be utilized in this context is price segmentation, more specifically second market discounting which takes advantage of differences in consumer preferences and WTP, and where different-priced versions of the same product are sold in different geographical or economic markets (Tellis, 1986). Pricing strategies like these can be used to match different consumer segments based on their WTP. For instance, marketers should consider charging more in e.g., specialty coffee shops that mainly attract eco-conscious consumers who are generally willing to pay more or offering discounts in more price-sensitive markets, for students or for purchase quantity of the product.

Positive sustainability attitudes were a key driver of WTP and even had a greater direct impact on WTP than perceived price fairness itself. For this reason, marketers and firms of sustainable coffee should also invest in effective communication and advertising that clearly aims at consumers who are conscious of the environment and of the social impact, specifically of coffee production. In this manner, targeted messaging by consumer involvement in sustainability-related issues enables firms to engage the audience in an emotional and value-based way. By aligning with consumers' ethical and environmental values, firms can justify the premium pricing of sustainable coffee. Moreover, by clearly communicating the benefits of sustainable production and consumption, marketers could attract a larger amount of ethically motivated consumers and ultimately nudge them to opt for sustainable coffee over conventional alternatives (Cook et al., 2023; Gorton et al., 2021). This could be done by utilizing e.g., sustainability labels such as Fairtrade or KRAV which evidently influenced consumers' price fairness perceptions. This way, benefits can be promoted in an easy and accessible way, as visibility also increases the probability among consumers of better understanding these labels (Annunziata et al., 2019).

Finally, for consumers who are less engaged with sustainability issues of coffee production, complementary strategies by firms may be necessary to promote sustainable consumption more broadly and effectively. For instance, marketing campaigns should emphasize the product's quality or appeal to health benefits, which may resonate more strongly with less engaged consumers than environmental messaging. In addition, temporary deals or discounts could serve as an effective tool to encourage first-time purchases of sustainable coffee. This is a common strategy to help products gain market share, while simultaneously reducing cost barriers for consumers, and therefore impact sustainable behavior intentions (Ghaffar et al., 2023).

Public policy should further encourage engagement among these types of consumers by e.g., offering subsidies to coffee producers who meet environmental and social standards, which in turn might help reduce retail prices for consumers. Other initiatives for policymakers might include creating campaigns funded by the government that promote the benefits of sustainable coffee to create public awareness or requiring clearer labeling schemes for sustainability attributes that help consumers make informed decisions and increase trust in the product.

Considering that sustainability attitudes are a main driver of WTP, it becomes clear that sustainability attitudes need to be fostered within society, both by firms and policymakers. This can be achieved by e.g., educational initiatives that integrate the importance of sustainable consumption into the school curriculum, or public awareness campaigns that make sustainable consumption more visible and desirable. These measurements can help implement a more

important stance of sustainability and ethical consumption in society, and thus, in consumers' everyday lives.

5.3 Limitations and Future Research

The present study does not come without limitations which need to be addressed as well. First, using a systematic sample method comes at a risk of a reduced diversity of the sample, since it is less random than simple random sampling and certain types of respondents could be over- or underrepresented in the sample (S. K. Ahmed, 2024). In this case, bias could arise due to the specific times and locations at which the sample was collected. This was particularly evident in the overrepresentation of participants holding a bachelor's or master's degree within this sample. Connected with this, the findings' generalizability is not only limited to the Swedish population, but specifically urban populations within the Västra Götaland area, as the sample only consisted of inner-city coffee purchasers in Gothenburg that may differ in their purchase behaviors, income levels or sustainability preferences compared to those living in suburban or rural areas. Therefore, future studies should replicate and conduct surveys in different countries or suburban areas, and with other sampling techniques to gain additional insights about consumer behavior and consumer choice in other countries, and to avoid over- and underrepresentation of certain populations.

Apart from geographical and sample constraints, participants' WTP for sustainable coffee was collected through a direct approach due to temporal and financial constraints, namely the Marbeau method (1987). Although participants revealed their true WTP and their valuation of sustainable coffee, real purchase behavior remained unobserved. This limitation is particularly relevant given the current market situation, where the continuous rise in coffee prices might further influence consumers' actual purchase decisions, and thereby may widen the gap between stated WTP and real purchase behavior. Future research should consider applying other methods of eliciting participants' WTP, e.g., Vickrey auctions or Becker, DeGroot and Marshak (BDM), which are both incentive compatible auctions, where participants are requested to actually purchase the product after stating their WTP (Breidert et al., 2006; He et al., 2024).

Although the goodness-of-fit indices for SEM exhibited a good fit of the specified theoretical structure to the data, it can be discussed whether the values for CFI (0.928) and TLI (0.919) are sufficient to suggest a good fit. While Bollen (1989) deem the threshold of 0.90 to be adequate for the incremental fit indices, others argue that an incremental goodness-of-ft index at 0.90 or slightly above is too low and could still be associated with a misspecified model, which is why a cut-off value of 0.95 should be employed instead (Hair et al., 2019; Russell, 2002). Future research should therefore aim to refine the model by reassessing the measurement items, particularly the ones that derived and were combined from different articles.

Subsequent studies should also explore additional antecedents of price fairness that were not included in this study. The moderate explanatory power of price fairness ($R^2 = 60.0\%$) suggests that other relevant factors may influence fairness and may account for an amount of unexplained variance. For instance and noted in the theoretical framework, a brand's reputation also evidently positively influenced price fairness perceptions (Campbell, 1999; Konuk, 2023), as

well as positive price perceptions among buyers (Herrmann et al., 2007). This highlights the need for further investigation into additional determinants of price fairness, particularly important to consider in contexts where consumers choose sustainable products over conventional alternatives and may consider other criteria to assess the product's price fairness.

Finally, this study identified moral and ethical antecedents of price fairness, namely sustainability attitudes and trust in labels, both relevant in the context of sustainable coffee consumption. This extends existing fairness frameworks and offers opportunities for future research that examine whether moral factors influence price fairness perceptions in other sustainable product categories. These could include both high-involvement products like electric vehicles or solar panels, as well as low-involvement products like organic food or personal care. Studying different involvement levels could provide valuable insights into whether the influence of these antecedents is consistent across different sustainable product categories.

In conclusion, the present study contributes to a deeper understanding of the relationship between WTP, price fairness and its antecedents in the context of sustainable coffee. To strengthen the generalizability and the modified framework of price theory, addressing this study's limitations and expanding its impact across different contexts and product types is essential to provide a foundation for future research within this area.

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Appendix

Table A1: Measure of variables

Factors	Items	Scale	Adapted from
WTP	(1) What is the highest price (in SEK) you would pay for this sustainable coffee, before you think it is too expensive or not worth the money?	Open choice	Marbeau (1987)
	(2) What is the lowest price (in SEK) you would pay for this sustainable coffee, before you question the quality?		
	(3) I am willing to spend more in order to buy sustainable coffee.	1 = Strongly disagree 5 = Strongly agree	Kumar et al. (2024)
	(4) It is acceptable to pay more for sustainable coffee.		
	(5) I would choose sustainable coffee over regular coffee, even if it costs more.		
Perceived Price Fairness	(1) The price of this sustainable coffee is reasonable.	1 = Strongly disagree 5 = Strongly agree	Konuk (2021)
	(2) The price of this sustainable coffee is fair.		
	(3) The price of this sustainable coffee is acceptable considering its sustainability attributes.		
Price Comparison	(1) In most supermarkets, the price of conventional coffee is on average 75 SEK / 500g. The price of this sustainable coffee is on average 100 SEK / 500g. How fair do you perceive the price of this sustainable coffee?	1 = Very unfair 5 = Very fair	Gielissen et al. (2008); Benson & Connell (2014)
	(2) In most supermarkets, the price of sustainable coffee is on average 100 SEK / 500g. The price of this sustainable coffee is also on average 100 SEK / 500g. How fair do you perceive the price of this sustainable coffee?		
	(3) I would only buy sustainable coffee if its price is similar to conventional coffee.	1 = Strongly agree 5 = Strongly disagree	

Price Transparency	(1) I understand what I am paying for when purchasing sustainable coffee. (2) The pricing of sustainable coffee is transparent and informative. (3) I am aware of how the price of sustainable coffee is determined. (4) The price of sustainable coffee covers all key costs (e.g., production, label certification, fair wages).	1 = Strongly disagree 5 = Strongly agree	Matzler et al. (2007)
Sustainability Attitudes	(1) I am concerned about the environmental impact of conventional coffee production. (2) I prefer to buy coffee from companies that ensure fair wages and ethical labor practices. (3) A company's commitment to social and environmental responsibility influences my coffee-buying decisions. (4) I actively seek out information about environmental and ethical aspects of the coffee brand before purchasing.	1 = Strongly disagree 5 = Strongly agree	Laos-Espinoza et al. (2024); Benson & Connell (2014); Hu et al. (2024); Kumar et al. (2024)
Trust in Labels	(1) I trust sustainability labels on coffee. (2) I rely on sustainability labels when making coffee purchase decisions. (3) Sustainability labels on coffee are credible and honest. (4) I believe that organizations that certify sustainable coffee are independent organizations and not influenced by external interests.	1 = Strongly disagree 5 = Strongly agree	Konuk (2021); Kumar et al. (2024)
Demographics	Age, Gender, Income, Education level	Direct choice	Own

Price Sensitivity	(1) I always research and compare prices before making a purchase. (2) I frequently visit different stores to find the best price of a product. (3) I pay close attention to prices when grocery shopping.	1 = Strongly disagree 5 = Strongly agree	Hu et al. (2024)
Consumption Habits	Coffee purchasing behavior	Direct choice	Own

Figure A1: CFA

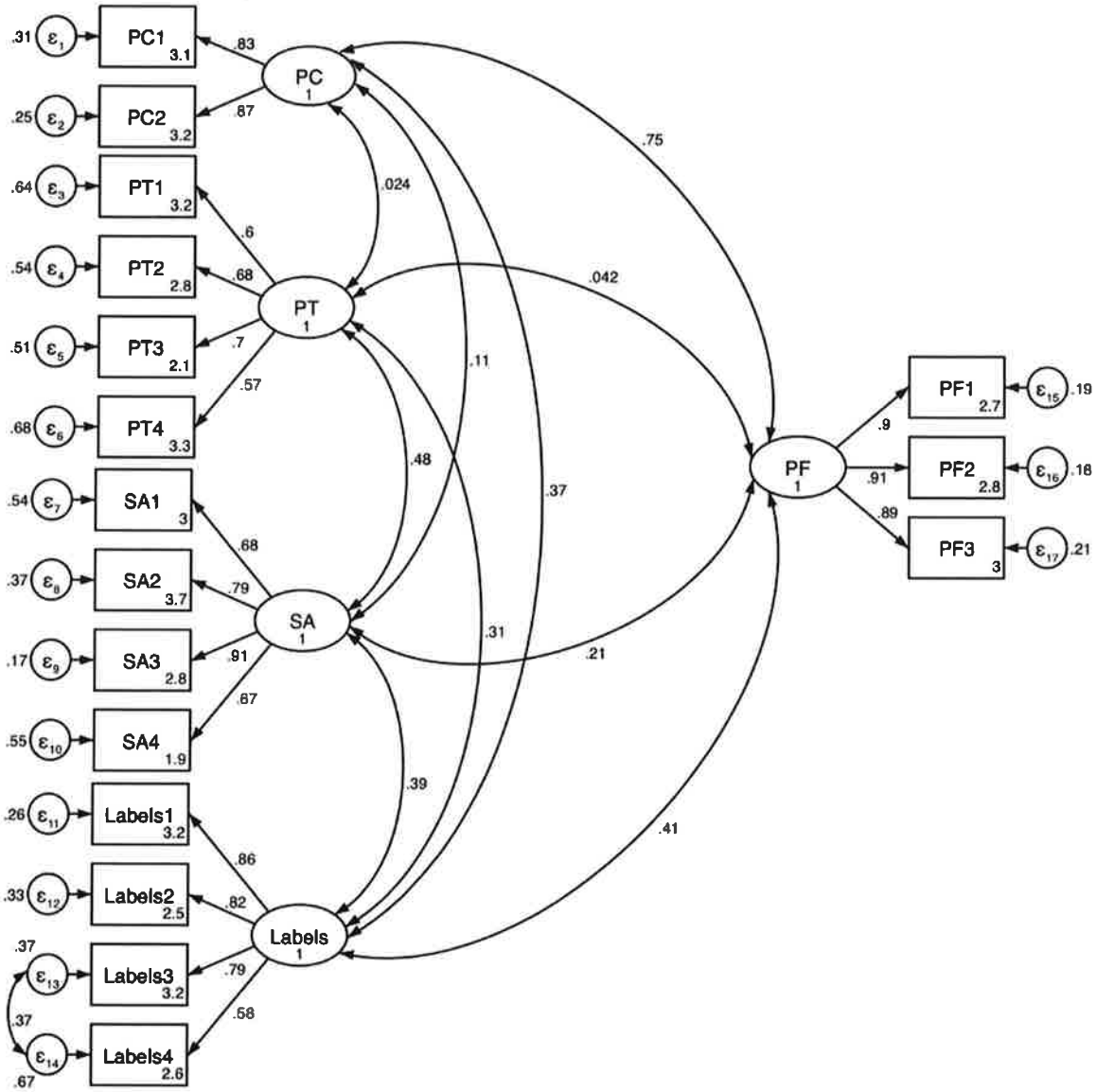

Figure A2: Survey

Hej, thank you for participating in this survey! This survey is part of our master's thesis which deals with prices of sustainable coffee! It will take approximately **5 minutes**. Your participation is voluntary, and you can end the survey at any time. All collected data will remain anonymous and will be only used for academic purposes. If you have any questions or concerns, please feel free to contact us.

Contact us: Pia Puschmann (guspuspi@student.gu.se), Van Anh Nguyen (gusvanang@student.gu.se). I understand that my responses will remain confidential and I consent to participate in the survey.

- ○ Yes (1)

Q1 How often do you buy packaged coffee (e.g., beans or ground)?

- ○ Never (1)
- ○ Less than once every 3 months (2)
- ○ Every 1-2 months (3)
- ○ Once a month (4)
- ○ Every 2-3 weeks (5)
- ○ Once a week (6)
- ○ Multiple times a week (7)

Skip To: End of Survey If How often do you buy packaged coffee (e.g., beans or ground)? = Never

Q2 Sustainable coffee refers to coffee that is produced in an environmentally friendly and socially responsible way. Please answer these general statements about sustainable coffee.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I understand what I am paying for when purchasing sustainable coffee. (1)	○	○	○	○	○
The pricing of sustainable coffee is transparent and informative. (2)	○	○	○	○	○
I am aware of how the price of sustainable coffee is determined. (3)	○	○	○	○	○
The price of sustainable coffee covers all key costs (e.g., production, label certification, fair wages). (4)	○	○	○	○	○

Q3 Sustainable coffee refers to coffee that is produced in an environmentally friendly and socially responsible way. Some more questions about sustainable coffee...

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I am concerned about the environmental impact of conventional coffee production. (1)	○	○	○	○	○
I prefer to buy coffee from companies that ensure fair wages and ethical labor practices. (2)	○	○	○	○	○
A company's commitment to social and environmental responsibility influences my coffee-buying decisions. (3)	○	○	○	○	○
I actively seek out information about environmental and ethical aspects of the coffee brand before purchasing. (4)	○	○	○	○	○

Imagine... A new sustainable coffee (500g package) has entered the supermarket. It consists of 100% Arabica beans which are known for their high quality. Sustainable coffee is produced in a way that ensures environmental and social aspects.

Environmental aspects of sustainable coffee inlcude for example:

- No use of harmful pesticides and fertilizers
- Reduction of water waste
- Protects biodiversity
- Fights against deforestation

Social aspects of sustainable coffee include for example:

- Fair wages for coffee farmers
- No child labor
- Fair and humane working conditions

Q4 What is the highest price (in SEK) you would pay for this sustainable coffee, before you think it is too expensive or not worth the money?

_____

Q5 What is the lowest price (in SEK) you would pay for this sustainable coffee, before you question the quality?

_____

Q6 What is your general view of sustainable coffee?

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I am willing to spend more in order to buy sustainable coffee. (1)	○	○	○	○	○
It is acceptable to pay more for sustainable coffee. (2)	○	○	○	○	○
I would choose sustainable coffee over conventional coffee even if it costs more. (3)	○	○	○	○	○

To remind you: Facts about the new launched sustainable coffee:

- 500g package
- 100% Arabica which are known for their high quality

Environmental aspects of sustainable coffee include for example:

- No use of harmful pesticides and fertilizers
- Reduction of water waste
- Protects biodiversity
- Fights against deforestation

Social aspects of sustainable coffee include for example:

- Fair wages for coffee farmers
- No child labor
- Fair and humane working conditions

Imagine... The final price of the newly launched sustainable coffee is 100 SEK / 500g.

Q7 Based on this, how do you perceive the price?

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The price of this sustainable coffee is reasonable. (1)	○	○	○	○	○
The price of this sustainable coffee is fair. (2)	○	○	○	○	○
The price of this sustainable coffee is acceptable considering its sustainable attributes. (3)	○	○	○	○	○

Q8 How do you feel about the price considering the following?

	Very unfair (1)	Somewhat unfair (2)	Neither fair nor unfair (3)	Somewhat fair (4)	Very fair (5)
In most supermarkets the price of **conventional coffee** is on average 75 SEK / 500g. The price of sustainable coffee is on average 100 SEK / 500g. How fair do you perceive the price of this sustainable coffee? (1)	○	○	○	○	○

Q9 How do you feel about the price considering the following?

	Very unfair (1)	Somewhat unfair (2)	Neither fair nor unfair (3)	Somewhat fair (4)	Very fair (5)
In most supermarkets the price of **sustainable coffee** is on average 100 SEK / 500g. The price of this sustainable coffee is also on average 100 SEK / 500g. How fair do you perceive the price of this sustainable coffee? (1)	○	○	○	○	○

Q10 I would only buy sustainable coffee if...

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
...its price is similar to conventional coffee. (1)	○	○	○	○	○

Q11 Sustainability labels on products are one way to inform consumers about their environmental and social standards. These are some examples of sustainability labels:

How much do you trust sustainability labels?

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I trust sustainability labels on coffee. (1)	○	○	○	○	○
I rely on sustainability labels when making coffee purchase decisions. (2)	○	○	○	○	○
Sustainability labels on coffee are credible and honest. (3)	○	○	○	○	○
I believe that organizations that certify sustainable coffee are independent organizations and not influenced by external interests. (4)	○	○	○	○	○

Q12 How do you shop in supermarkets in general?

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I always research and compare prices before making a purchase. (1)	○	○	○	○	○
I frequently visit different stores to find the best price of a product. (2)	○	○	○	○	○
I pay close attention to prices when grocery shopping. (3)	○	○	○	○	○

Q13 How old are you?

_____

Q14 Which one of the following best describes your gender?

○ Male (1)

○ Female (2)

○ Non-binary / third gender (3)

○ Prefer not to say (4)

Q15 What is your average monthly income (before taxes)?

- ○ Less than 20.000 SEK (1)
- ○ 20.000 SEK - 30.000 SEK (2)
- ○ 30.001 SEK - 40.000 SEK (3)
- ○ 40.001 SEK - 50.000 SEK (4)
- ○ 50.001 SEK - 60.000 SEK (5)
- ○ 60.001 SEK - 70.000 SEK (6)
- ○ 70.001 SEK - 80.000 SEK (7)
- ○ More than 80.000 SEK (8)

Q16 What is your highest completed education level?

- ○ Less than highschool education (1)
- ○ Highschool or equivalent (2)
- ○ Vocational education (e.g., apprenticeship, trade school) (3)
- ○ Bachelor's degree or equivalent (4)
- ○ Master's degree or equivalent (5)
- ○ PhD or equivalent (6)